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HARVARD MEDICAL ALUMNI BULLETIN

VOL. 36

CHRISTMAS 1961

NO. 2

The Cover: Thomas O. Nevison, Jr. '56, accompanied Sir Edmund Hillary's 1960-61 Himalayan Scientific and Mountaineering Expedition. Cover picture is of Anna Dablan, 22,400' high, climbed by the expedition. At right is Pat Barcham, a member of the expedition. Story on page 15. Photos, courtesy World Book Encyclopedia.

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LETTERS

Syphilis Redivivus

To the Editor:

I greatly enjoyed the article in the last issue of the *Bulletin* discussing the history of syphilis. However, the organism was not discovered in 1900, but 1905. I also rather deplore the attitude that "penicillin has rung the bell on syphilis." Granted, the incidence is not to be compared with that during the war years; nevertheless, a countrywide increase of 400 per cent in the past five years and an increase of 17 per cent in Massachusetts in the first nine months of '61 as compared to '60 is hardly compatible with the gradual disappearance of syphilis.

The attitude that one must no longer consider this disease as a diagnostic factor probably contributes as much as anything to belated diagnosis and the occurrence of group epidemics such as that recently noted in Haverhill. I think it's extremely unfortunate to add fires to that impression.

F. WILLIAM MARLOW, JR. '27
Brookline, Mass.

Dr. Marlow is right about the discovery date of Treponema pallidum. I am sorry if I have conveyed the impression that syphilis is no longer a problem. I did state, however, that there has recently been an "alarming rise in the number of cases of syphilis . . ." Syphilis is again a problem and reveals our present social atmosphere: The increasing incidence is apparently among teenagers and young adults, whereas the incidence in prostitutes has reportedly declined. I am not familiar with the group epidemic in Haverhill. While it is true that penicillin has "rung the bell" on the treponeme, there is still a very definite problem in tracking down contacts.

Also, it should have been Schaudinn, not Shaudinn, who isolated the treponeme in 1905.

GRAEME HANSON '62

To the Editor:

As a reader of the *Bulletin*, I was delighted to see the recent inclusion of the historical article, "Syphilis Sive Morbus Gallicus," but my pleasure was greatly dampened by learning on page 35 that the poem by Fracastorius was published in 1525 rather than 1530, that the gonococcus was discovered by Neisser rather than Neisser, that Shaudinn (I had always

assumed the name was spelled Schaudinn) isolated the *Treponema pallidum* as early as 1900 and that John Hunter in 1707 inoculated himself with exudate from a gonorrhea patient 21 years before his birth in 1728. I agree that the teaching of medical history is important, but I am still skeptical as to John Hunter's antenatal precocity and certainly consider this interest in gonorrhea most improper for one as young as implied in this article.

GAYLORD W. ANDERSON '28
Mayo Professor and Director
School of Public Health
University of Minnesota

Dr. Anderson's dates are all correct. 1707 should of course have been 1767. For these errors, the Editorial Office of the Bulletin takes shame-faced blame, and assures Dr. Anderson that heads have rolled.

Harvard Medical Classics

To the Editor:

The other day, while reading your article in the *Bulletin* concerning Bob Lovett and "Project Archive," it occurred to me that from the murky depths of the Harvard Medical Archives someone should pluck forth the

King leads by a nose: Saud of Arabia and entourage leave Peter Bent Brigham Hospital for short tour of North Shore. The King was treated for a stomach condition and cataracts during December. Photo, Herman Goslyn.



most significant items and bring them to light again in a manner worthy of Harvard. A book title suddenly flashed up in my mind: *Harvard Medical Classics*.

It would be a fine project to gather together in one bound volume about a dozen or a score of the most outstanding papers and excerpts from the most outstanding books published by Harvard doctors.

Such a volume would compare favorably with Ralph Major's *Classic Descriptions of Disease* (1932), Emerson Kelly's *Medical Classics* (1936-1941), Henry Sigerist's *Bibliotheca medica Americana*, the classics published by the Sydenham Society, or K. Sudhoff's *Klassiker der Medizin* (1910-1923).

There would be various methods of procedure in such a project. One way would be to publish a leisurely series of one-page reviews of old Harvard classics in the *Bulletin*, with the idea that the classics themselves would some day be reprinted along with the *Bulletin's* reviews — perhaps as a bicentennial volume about 1982.

Retired faculty men could be asked to contribute the reviews in their respective fields. For instance, Dr. Joseph Aub might be persuaded to write a review of Dr. John C. Warren's book, *Surgical Observations on Tumours* (1837), which Dr. Aub himself claims to be "the first American book on the subject."

Naturally the question of selection would arise. One criterion of a medical classic is its citation in the book called *Garrison and Morton's Medical Bibliography* (1954). Any list of Harvard medical classics would undoubtedly include Oliver Wendell Holmes's paper on puerperal sepsis (1843), Henry Jacob Bigelow's report on ether anesthesia (1846), Reginald H. Fitz's monograph on appendicitis (1886), and George R. Minot's paper on pernicious anemia (1926), which shared a Nobel Prize in 1934. These works are all cited by Garrison and Morton. Almost fifty MGH men have been cited in their bibliography.

What do you think of this idea?

GEORGE H. JACOBSEN
Department of Surgery
Massachusetts General Hospital

Children of Darkness?

To the Editor:

I think it unwise for us to accept as "realistic protection from nu-

clear attack (which) can be obtained at moderate cost" the blast, heat and fallout shelter so thoroughly described by Dr. Davies in the fall *Bulletin*. The shelter approach to the fundamental problem facing mankind is grotesquely shortsighted.

I don't mean to be personally critical of the designer for he is indeed within the probable majority of our citizens who have turned to consideration of fallout shelters — either consciously or unconsciously — rather than face the momentous task lying before us: that of preventing thermonuclear war.

What would life be like after the bomb? What would the world be "outside the hatch?" Who could win such a battle of colossal madness? If 50 million American lives are lost by incineration or fallout here and 50 million simultaneously die in Russia, would this be a victory for anyone?

If our generation cannot abolish nuclear war when we have seen the horror of its demonstration at Hiroshima (where a mere 20 kilotons cost 100,000 lives) what hope can we have for future generations — if any — who might survive World War III? Would there be the slightest grounds for believing that our sons and grandsons would forswear such madness if we cannot? In brief, what would we be saving ourselves and children for?

So enormous is this task that it is the special responsibility of all of us who are educated beyond the level of the average man actively to address ourselves to the prevention of nuclear war. To do less is an abdication of our responsibility surely as grave as a violation of our Hippocratic Oath.

We must discuss this problem and search for any clue to its solution. We must make our statesmen aware of our profound concern — for it is only with the support of an enlightened citizenry that they can soundly make the awful decision forced upon them. On a personal and professional level, too, we must realize that there are in all lands men whose concern is "the care of the patient" who are coming to understand that today's patient is *Man*. We must foster this awakening realization by encouraging scientific and cultural intercourse among the nations. Dollar for dollar and thought for thought, our long-range goals are better served by supporting the exchange of Russian and American medical students, clinicians, and basic scientists than in the construction and discussion of fallout shelters.

JAMES R. HUGHES '60
Brookline, Mass.



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*"Many souls . . . within the same breast."
(The Caller in the Moor by Paul Klee)*



NEW PROFESSORSHIPS

TWO souls, alas, within one breast," was Goethe's puzzled cry in the morning of a new age. Now, if we look at our own young age, it appears quite possible that many souls may live happily within the same breast.

The named professorship has traditionally been endowed by *individuals* to commemorate *an* individual. No longer is this true. The diverse enthusiasms which in the past nine months have created a constellation of new professorships in Harvard University have come from a fireworks of new sources. They have almost without exception broken with precedent.

FOR a private health agency to provide the tenure support for a particular man, rather than for a carefully specified project, is a radical and far-sighted departure. One professorship that introduced just such a new concept was the Alvan T. and Viola D. Fuller-American Cancer Society Professorship, established last June by Harvard on the basis of the capital gift provided by the American Cancer Society. These funds were contributed to the Society by the son of the former governor of Massachusetts, Alvan T. Fuller, Jr.

The societies have been understandably concerned that their monies be devoted to a special kind of need which the public could readily understand. Thus, the National Foundation for Infantile Paralysis devoted the bulk of its funds, in the beginning, to braces, crutches, wheel chairs and respirators. For many years, it was difficult for medical schools to obtain unrestricted support for basic research of the kind conducted by Dr. John Enders, which led to the first successful growing of the polio virus in tissue culture and thence to the development of the first effective polio vaccine.

The first incumbent of this new Fuller-American Cancer Society Professorship, who will devote his energies to projects in radiation studies with immediacy for the drive against cancer, has not yet been announced. At the end of twenty-five years, however, all restrictions as to the field of investigation will be removed. For a public foundation, such as the American Cancer Society, to establish a professorship is an important new concept for both the foundations and the medical schools.

AS a second ground-breaking concept in new professorships, a Harvard Teaching Hospital has this year for the first time provided the endowment to enable Harvard to establish a named professorship at the Harvard Medical School, with funds contributed by an anonymous donor. On October 4, the Bronson Crothers Professorship in Neurology was established at The Children's Hospital Medical Center. Dean Berry stressed the wisdom of the Trustees of The Children's Hospital in not restricting the chair to *Child* Neurology, or attaching other limitations. He added that the only stipulation provides that, so long as the present relationship exists between The Children's

Hospital and the Medical School, the chair will be centered the Children's Hospital.

The Crothers Professorship in Neurology demonstrates the growing sense of unity of the Harvard Medical Center, which had its formal birth in the legal incorporation of September, 1956. The professor selected for the chair will serve simultaneously as Neurologist at The Children's Hospital. It is clear that the *ad hoc* Committee of the Faculty of Medicine that is seeking the "most eminently qualified person" for the post will have a great responsibility in filling the large and sometimes controversial boots of Bronson Crothers '09, and those of the father of neurology and neuropathology in New England, James Jackson Putnam '70. On pages 8-9 of this issue, Dr. Crothers and his famous predecessor are paid more adequate tribute.

AS a third kind of new professorship, the first endowed chair in orthopedics, the Harriet M. Peabody Professorship, was created by Harvard on December 3. The New England Peabody Home for Crippled Children in Newton Center announced a gift of one million dollars to establish at Harvard Medical School the Harriet M. Peabody Fund. This Fund will, in Dr. Berry's words, "bring into being for the first time a full-time Department of Orthopedics at the Medical School."

For many years, the Peabody Home placed its emphasis on orthopedic cases and crippling diseases in children, such as tuberculosis of the bone. Founded in 1894 through the efforts of Mrs. Harriet M. Peabody, the Peabody Home was one of the first rehabilitation units in the United States. Following a suburban circuit, the Home has moved from Weston to Hyde Park, remaining there until 1922, when it acquired its present site on Oak Hill in Newton Center. With the change in the disease spectrum, the Home has undergone an 18-month re-evaluation of its functions. Although the Trustees of the Peabody Foundation have voted to maintain their corporate existence, they have, at the same time, voted to give additional funds to The Children's Hospital to permit the building there of the Peabody Clinic for Crippled Children.

"PROFESSORSHIPS on the installment plan" was the idea that inspired a small charitable Boston Foundation, the Elsie T. Friedman Foundation, in the hope, "that our example may be a source of inspiration for others to do likewise, even those whose resources are not extensive." Last June, Dr. Gustave J. Dammin, Pathologist-in-Chief at the Peter Bent Brigham Hospital became the first incumbent of Harvard's newly endowed Elsie T. Friedman Professorship in Pathology.

The Friedman Foundation plan works as follows: The Foundation offered to contribute \$25,000 each year toward the support of the chair until such time as the

endowment, also to be built up through yearly installments, should reach the sum of \$500,000. In the meantime, the named professorships might be activated immediately. The principle of giving a donor the enjoyment of watching his funds at work while they are building up has a very strong and valid appeal.

The dénouement of this Friedman plan of installment giving was unexpected. The Trustees discovered that the average return on the University's endowment funds is appreciably higher than the income being realized on their own funds. Having weighed these factors, they decided that the endowment for the chair should be completed in the present year through one final capital gift.

It is interesting to examine the kind of individual and the kind of work which this chair will support, since it is the only one of the group of the new chairs which has been filled to date. Dr. Dammin's research studies, in broad terms, have involved both tropical diseases and the problems of tissue and organ transplantation. Three years ago at the Peter Bent Brigham Hospital, he and his team were responsible for the development of a series of skin graft tests requisite to the successful transplantation of a kidney in fraternal twins. He has, in addition, become an expert on tropical diseases through an interest which began in 1937 as an exchange student in parasitology and tropical medicine at the University of Havana. During World War II, he served as head of the U.S. Army Dysentery Commission in the India-Burma Theatre; and currently, he directs a study in Guatemala for the Army, seeking the relative roles of microbial agents and malnutrition in fatal diarrheal disease in children.

Dr. Dammin will direct the new Cardiovascular-Renal and Transplantation Center, soon to be established at the Brigham Hospital with the help of a half-million dollar grant from the National Institutes of Health. The research work will be concerned with studies of vascular patterns in coronary and pulmonary disease, experimental coronary arterial occlusion, whole-organ homotransplantation in animals, the effects on marrow following ionizing radiation and the prolonged functional survival of the kidney homograft in man and experimental animals after administration of synthetic drugs.

ONE new chair brings us the glad news that the modern professorship of many souls has not completely superseded the old one-souled variety. Following the traditional method of establishing a named professorship, the friends, Trustees, patients and employees of Herrman Blumgart '20 at the Beth Israel Hospital on November 26 announced the gift to Harvard of funds to create the Herrman Ludwig Blumgart Professorship of Medicine. Dr. Blumgart thereby becomes one of the few professors to be honored during his own lifetime. At a formal dinner which marked the official announcement, Dr. Berry characterized as "remarkably perceptive" the vision that the trustees of the Beth Israel demonstrated thirty-three years

ago, when they chose young Dr. Blumgart as the Hospital's first Director of Medical Research.

Speaking of Dr. Blumgart's personal qualities, Dr. Berry said: "For many years I have asked him to present to our entering students on the first day of School their first clinic and show them their first patient." The feelings that the students return are well expressed in their dedication of the 1957 *Aesculapiad*:

"The first day we met, even before our first official duties at Harvard Medical School, you made us feel that we were physicians. For that kindness, and for your continuing warmth, clarity and inspiration, we dedicate to you the 1957 *Aesculapiad*."

In the field of research, this physician is an authority on the normal and pathological physiology of circulation. Already in 1928, he had devised an accurate method for measuring blood velocity. By injecting a solution of radioactive salt into the left arm and measuring the time it took to reach the right arm, he provided a more accurate means than hitherto available for measuring the velocity of the blood. Within the past decade, Dr. Blumgart and his associates have developed a method for relieving the suffering of angina pectoris by reducing thyroid-gland activity and, hence, activity of the metabolism, through the administration of radioactive iodine.

It is appropriate that the group at the Beth Israel Hospital, youngest of Harvard's teaching hospitals, should choose this traditional means of honoring Dr. Blumgart by providing the funds for the establishment of the Herrman Ludwig Blumgart Professorship at Harvard.



THE named professorship is an Anglo-Saxon institution reaching, if we may be so heretical, a good deal farther into the past than Harvard's founding. After the Reformation, Oxford and Cambridge developed strong traditions of autonomy and of private control. The combination of private fortune, altruism and initiative in Anglo-Saxon countries helped to establish not only educational autonomy but the custom of endowing named professorships. Neither of these customs grew up on the Continent. The result was to encourage on the Continent a tradition of state support and centralization in the universities and, in Anglo-Saxon countries, decentralized organization and private control.

The excitement of new challenges and responses should not allow us to forget the longer reverberations of our history. If, indeed, we are new in the variety of groups and organizations which are creating new professorships today, we may nevertheless feel the strong thread of the past in the private initiative and concern which have endowed these professorships in the Harvard Faculty of Medicine.

(Right) Mr. Chauncey C. Nash of Boston presented the Medical School with a colored lithograph of Shattuck's Bunting (named by Audubon for Dean George Cheyne Shattuck, Jr., 1864-69). The picture will hang in the new Countway Library of Medicine.

Along the Perimeter



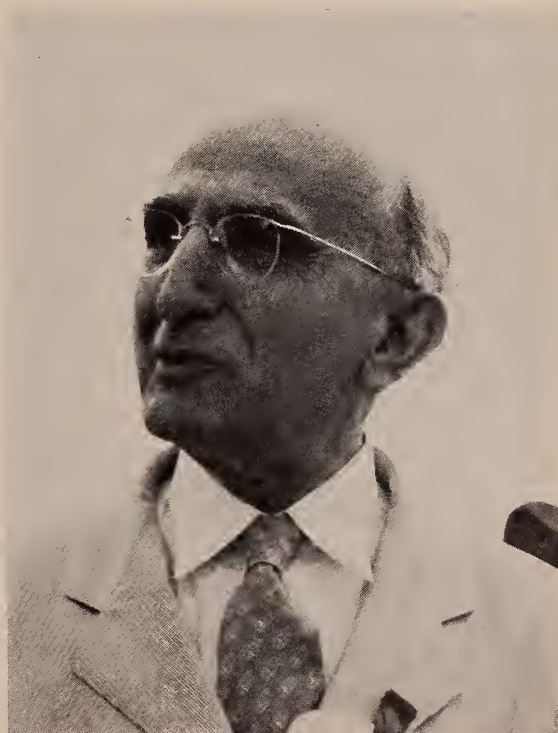
What Alumni Can Do to Help the Program for Harvard Medicine.

We all no doubt know that a campaign is on for \$58,000,000 to strengthen the activities of the Harvard Medical School. The large sum is primarily needed to maintain the continued growth of the school itself, to establish new departments and to fortify old ones. A secondary purpose is to help the work of the various hospitals that are closely associated with the Harvard Medical School in those functions that pertain to teaching and research.

Harvard Medical School Alumni can be of help in this extremely important undertaking by interesting our friends or grateful patients who have large means. We should not feel hesitant about this. When we ask for support for matters concerning health and especially for the Harvard Medical School we are inviting participation in the most appealing and most valuable enterprise imaginable. The right sort of person may thank you greatly and actually feel indebted to you the rest of his life for bringing to his attention such a satisfying opportunity to do some unselfish good for his fellow man.

The conclusion to be drawn from all this is to think over the possibilities in our immediate environment and to contact Mr. Laurence O. Pratt, Harvard Medical

Dr. Samuel A. Levine suggests a role for the Alumni in the Program for Harvard Medicine.



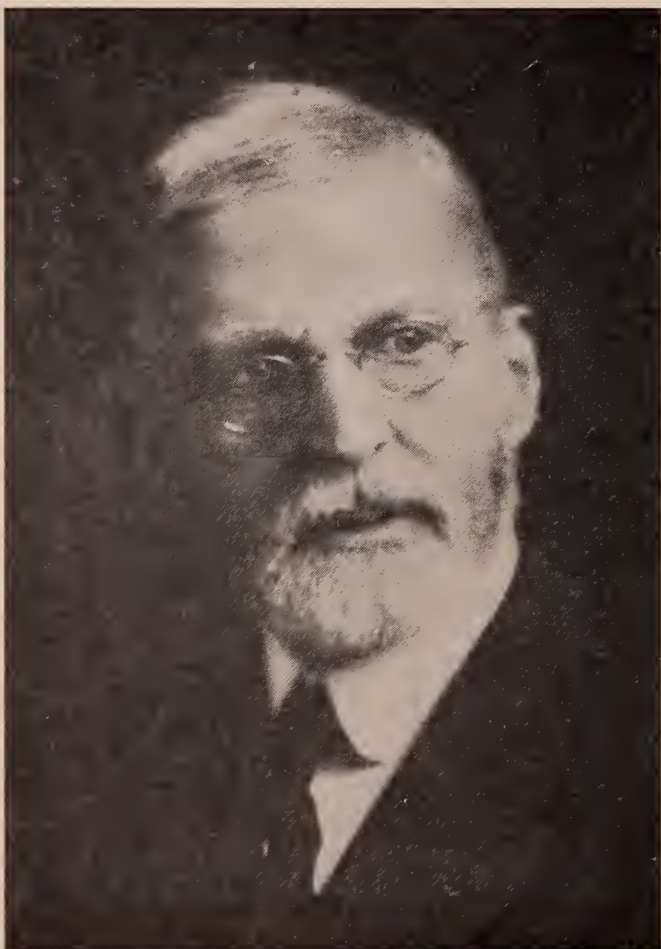
Center, 275 Longwood Avenue, Boston 15, Massachusetts, telling him what you have in mind. The final decision may be that you should discuss the whole matter appropriately with the particular friend or patient (although in some instances it may be advantageous that someone else do this). The main point is to keep the vital drive in mind and to use opportunities to help reach our goal. You will be helping your Alma Mater, you will be consolidating more firmly your relations to your friends and patients and you will be serving mankind.

SAMUEL A. LEVINE '14, PRESIDENT
HARVARD MEDICAL ALUMNI ASSOCIATION

Bronson Crothers Professorship of Neurology: "Not the Disease Only, But Also the Man."

In naming a new chair in Neurology for the late Bronson Crothers '09, Harvard University pays tribute to a great physician whose gruff exterior masked a personality gifted with insight, humility, humor and gentleness adequate to endear him to his young patients and to earn the respect even of those who disagreed with him. The founding of this chair marks the first time in its 179-year history that Harvard Medical School has re-

*James Jackson Putnam '70, the founder of
neurology and neuropathology in New England.*



ceived funds from one of its associated teaching hospitals, (The Children's Medical Center Hospital) to establish a professorship.

Bronson Crothers' colleagues remember his need to be of service to mankind, particularly his dedication to those undergoing the great distress of recognizing and providing for the handicaps of their neurologically impaired children. His ability to help parents believe in and plan for the happiness of such children amounted to genius.

After earning his M.D. from Harvard in 1909, Dr. Crothers interned at the Massachusetts General Hospital and The Children's Hospital. He then practiced pediatrics briefly in St. Paul, but soon realized that the self-limited diseases of childhood and the conventions of medical practice could not provide sustained and adequate interest to him. In 1915, he joined the British Royal Medical Corps, transferring to the U. S. Army Medical Corps in 1917. For his service with the British he was mentioned in dispatches and commended by both the King and Sir Winston Churchill. Dr. Crothers' heroism, however, ranged from the sublime to the ridiculous: He was, for example, not above dashing back into a burning hospital to rescue a nurse's false teeth forgotten in hasty flight.

Dr. Crothers' interest in neurology was greatly stimulated by, if not actually born of, his association during military service with the work of Sir Henry Head and Dr. George Riddoch in connection with wounds of the nervous system, particularly those affecting the spinal cord. Upon return to civilian life, Dr. Crothers spent a year in the study of the nervous system. Half of this year was spent with Dr. Stanley Cobb '14, in the laboratory of Dr. Walter Cannon '00, and half at the Neurological Institute in New York. In 1920, he was appointed neurologist to The Children's Hospital and in 1928 he established one of the first pediatric neurological services in the United States at that hospital.

Early in his neurological career, Dr. Crothers became convinced that established obstetrical procedures constituted a threat to the integrity of the fetal nervous system. His protests against the use of unphysiological obstetrical procedures earned for him the rancor of many obstetricians, but he persisted; and in part, the present relative safety of the infant during birth is a result of his work. Dr. Stanley Cobb recalls that during the heat of the battle, in a skit written by himself and Dr. Tracy J. Putnam '20, Dr. Crothers was awarded the M.B.O., "Master Baiter of Obstetricians," a spoof that tickled Crothers long afterward.

Much of Dr. Crothers' early work on obstetrical injuries to the spinal cord was done with Dr. Marian C. Putnam, daughter of Dr. James Jackson Putnam '70, the founder of neurology and neuropathology in New England. James J. Putnam had been intensely sensitive to the personal problems of his patients and was convinced that there was much more to practicing medicine than merely treating the body. In fact, he entitled his Shattuck Lecture of 1899, "Not the Disease Only, But Also the Man."



Bronson Crothers '09: "It is impossible to deal wisely with children handicapped by disorders of the nervous system, unless the educational and emotional elements are considered."

Dr. Crothers read deeply not only of Putnam's works but also those of Dr. William T. Councilman, Shattuck Professor of Pathological Anatomy from 1892 to 1922, and Dr. Hughlings Jackson, the famous nineteenth-century English neurologist; all of these men influenced him profoundly.

Dr. Crothers' forthright but optimistic manner won him the confidence of countless young patients and their families. His perceptive observations and their astute application to medical problems produced diagnoses that to the uninitiated appeared dazzling. His skill in interview and his ability during conferences to preserve the self-respect of parent and patient, were to Dr. Randolph Byers '21, long a close associate, Dr. Crothers' most endearing quality.

During the thirty-eight years following his appointment to the Children's Hospital, Dr. Crothers taught at the Harvard Medical School, where he became Clinical Professor of Pediatrics in 1945. As a teacher he was disarmingly straightforward. He could develop a new history, home management, medical aspects, diagnosis and treatment into an interesting teaching exercise before students, and a rewarding interview for the parent.

As his interest in the personality problems of his patients increased, he sought the aid of psychologists, psychiatrists, social workers and nursery school teachers to help toward the understanding and management of these problems. The team work in which he pioneered, though now generally accepted, was assembled only under considerable stress. In 1937, he published *A Pediatrician in Search of Mental Hygiene* and summed up his thinking in the following passage:

I have become convinced that it is impossible to deal wisely with children handicapped by disorders

of the nervous system, unless the educational and emotional elements of each situation are carefully considered. Both as a practitioner, and as a teacher of medical students, I have recognized with increasing clearness, that pediatricians are, as a rule, quite unaware of many of the stimulating and highly significant contributions of the psychologist, psychiatrist, psychoanalyst, the teacher and social worker in regard to children.

Realizing that many of his theses were certain to be received with skepticism, he concluded the book with the reflection, "There is a certain inconspicuousness about being under a cloud that is rather restful."

Although he remained to his death in 1959 a staunch advocate of the hitherto unorthodox blend of mental hygiene and neurology, he avoided the public spotlight, administrative duties, and praise to himself or to others. One of his former house officers remembers that a colleague stopped Dr. Crothers to inquire about his own progress in his position. Crothers replied simply, "you're still here aren't you?" to him a straightforward statement of relevant fact.

James J. Putnam, in his previously noted lecture, had described what came to be Dr. Crothers' aim in life.

"The opportunity for usefulness is enormous; for I hold that to rid a patient of a tormenting delusion, and to increase his power of resistance against debasing habits and thought, is quite the equivalent of a successful operation for a painful disease, and needs as much skill and preparation."

It is therefore very fitting that Dr. Crothers' image be perpetuated in the new professorship, a monument to his intelligence, honesty and courage.



Bettman Archive-Brady Photograph

Civil War ambulance drill of the 57th New York Infantry. The four-wheeled vehicle (extreme right) had been tested in expeditions on the plains; but the two-wheel ambulance, issued in 1861 in the ratio of four to one of the four-wheeled kind, had never been properly tested and worked poorly. All ambulances were in extremely short supply.

The Civil War Again:

Henry Bowditch's Ambulance Corps

Although we are now in the last gasp of the Civil War Centennial Year, the *Bulletin* does not intend that our School should let it die without heaving that last in the name of Harvard.

Even the most chauvinistic of Harvard Medical Alumni will agree that the Bigelows and Bowditches in our past confuse rather than amuse. If a few Bowditches could have eschewed white beards; if the fathers could have varied somewhat more the first names of their progeny, we might be more charitable.

One of those least deserving of this uniformly be-whiskered anonymity is Henry Ingersoll Bowditch 1832, Jackson Professor of Clinical Medicine from 1859 to 1867. Despite beard and name, he was a colorful and impetuous man, bursting with more than his share of the ripe sentimentality and elevated sentiments of the age.

The Civil War was, for Henry I. Bowditch, no five-year affair, but his "Thirty Years' War of Anti-Slavery." As a young physician in 1835, the outrage of witnessing "gentlemen of property and standing" unjustly maul and imprison the antislavery agitator Garrison determined Bowditch that he would devote his "whole heart to the abolition of that monster, slavery." Already in 1838, as newly-appointed physician to the Massachusetts General Hospital, Bowditch flouted the hospital law by admitting a Negro patient and then calmly resigning his own position. Although he was persuaded to return, the angry young man was not absorbed into the fold of aristocratic Boston. He worked on vigilance committees, shocked aristocratic Bostonians with what they regarded revolutionary and lawless methods of agitating reform.

In 1854, when an escaped slave named Anthony Burns was given up to his master and taken in fetters down Court and State Streets to the wharf, Bowditch and his friends bitterly watched the U.S. revenue cutter steaming away south with Burns and vowed that such a disgrace should never again happen on the soil of Massachusetts. The Anti-Manhunting League they formed was a secret, oath-bound club with twenty-four lodges in various Massachusetts towns and boasted a membership of over four hundred. Each man was armed with a "billy" and trained by frequent drills for capturing and carrying off slaveholders who should hunt and reclaim runaway slaves in Massachusetts. It is perhaps a shame that, after this elaborate preparation, Bowditch was given no opportunity to hustle off a slave owner with his billy.

As late as 1864, Bowditch, in his work as Medical Examiner for the Union Army, was impetuous enough to make the unfortunate move of branding with a black "D" in nitric acid the underarm of a confessed bounty jumper and deserter. He was subsequently sued for \$1,000 by the branded man, and lost the case, plus some six hundred dollars in lawyer's fees.

Henry Bowditch's real work of glory, however, came during the Civil War. His agitation was crucial in the passing of legislation for the formation of a separate ambulance corps, staffed by trained attendants under the jurisdiction of the Medical Corps, rather than the Army Quartermaster Corps, as had previously been the practice. The inception of his plan is contained in his own hair-raising story of medical service with the Army in Virginia early in the War. The civilian ambulance drivers were a poor rabble, he recounts:

"Very soon after we started on that sad and terrible journey, I perceived by (my driver's) volubility of speech



and his constant profanity that the driver was drunk! It was bad enough to listen to such language and I was glad when he became drowsy, but then another and a worse trial came upon us. He could not easily keep himself erect on the seat and every now and then would fall upon my patient . . . I finally took the reins in my left hand and, passing my right arm around the drunkard's waist . . . during the remainder of the night I prevented the scoundrel from falling backwards, and I cared little for his tumbling occasionally on me. I should not have cared if he had fallen forward and been crushed under the wheels."

One might keep in mind that medical and sanitary affairs during the Civil War were not only in this but in almost every other sense somewhat horrifying by modern standards. By standards of previous wars, however, especially those of the Crimean War, they were not bad. In Bowditch's efforts to have legislation passed to form an adequate and separate ambulance corps, he felt not only the bitterness of opposition from hidebound generals but also coolness from his own Massachusetts senators; neither senator would consent to vote for the various bills introduced during the course of the first four war years. It was not to be until the year before the South fell that Bowditch, with the help of public opinion aroused by fire-brand Horace Greeley of the *New York Herald Tribune* and the (already) enlightened *Boston Medical and Surgical Journal*, was able to sigh with relief:

"And my end was accomplished, for I cared not what special arrangement was made so long as a corps of drilled men was thereafter to be with every army of these United States."

The system introduced was the ambulance service devised independently by Dr. Jonathan Letterman, Medical Director of the Army of the Potomac. It worked so well that it became not only the model of the Union

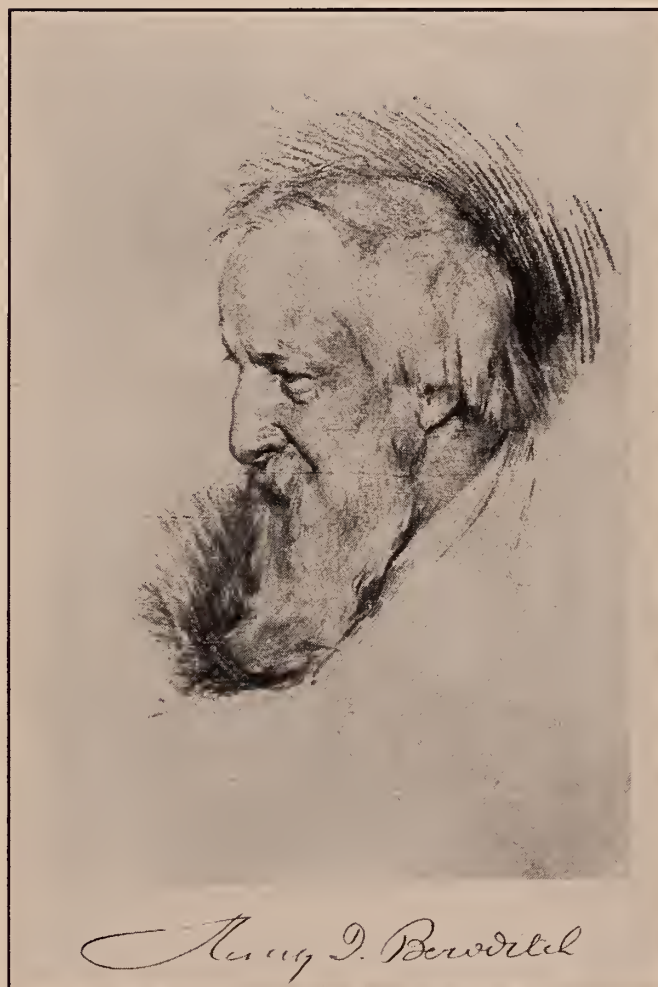
Army, but for the world's armies for the next two generations.

But the event which in the intervening war years had given the punch to Dr. Bowditch's appeal to the nation had injected into his own life its deepest tragedy, his son's death. On March 18, 1863, he received the news from his nephew, Henry P. Bowditch (H.M.S. 1861) at Potomac Creek:

Nat shot in jaw. Wounded in abdomen. Dangerous. Come at once.

Bowditch was ever afterward mindful that his eldest and favorite son, his "darling boy" Nathaniel, had lain for hours upon the field and was at last removed, painfully and slowly, upon a stranger's horse, no ambulances being available. "The extra suffering entailed upon a brave young officer who was only one of the thousands thus deserted in hours of agony . . . summoned me like the notes of the bugle to the charging soldier." His short impassioned pamphlet, "*A Brief Plea for an Ambulance System for the United States: as drawn from the extra suffering of the late Lieutenant Bowditch and a wounded comrade,*" Dr. Bowditch appended to an address on the same subject made to the Harvard Medical graduating class.

(continued on page 12)



Henry I. Bowditch at 73 — from a charcoal drawing by John W. Alexander about 1883.

In Dr. Bowditch's later years, which were filled with contributions to medicine and election to high medical office (President of the American Medical Association; President of the newly formed National Board of Health), he dwelt often upon the sacrifice made by his "beloved son, cut down in the strength and beauty of his early manhood, as a sacrifice to the sacred cause of freedom." In these feelings he was apparently joined, not only by his family, but by the fiancée of the dead Nathaniel, who spent 12 years in the purest kind of mourning and was adopted by the elder Bowditch as his "second daughter." She then faded away quite rapidly of pulmonary disease after an attack of scarlet fever — in a manner befitting Victorian sentiment. Dr. Bowditch's keen sense of loss, it is recorded, "was softened by the beauty and poetic character of her early death."

Having thus contributed nothing further to document a well-documented War, the *Bulletin* is satisfied that one of our heroes has been plucked from oblivion in this Centennial Year.

*Thomas Hinckley Lanman, III,
7 lbs., 15 oz., born at the Boston
Lying-in Hospital, November
fifteenth, 1961.*



Herman Goslyn



INSIDE H.M.S.: Deck the Halls with Clichés Jolly

The slinky girl was clad, as slinky girls should be, in a mauve sheath dress and, leaning against the Common Room door, was doing her best to look arch. There was a party going in the Common Room and Christmas things and medical people were scattered about. "Tell me," she said to the third-year medical student, as she cradled her cup of Haffenreffer beer, "is Ben Casey for real? I mean, what is it really like in the *cliniques*, so to speak?" Like all slinky mauve girls, she had eyes like limpid pools, and I was intrigued.

Me, the third-year medical student, fresh from triumphs in obstetrics, gynecology, pediatrics and ophthalmology, cleared my throat and became immediately less phlegmatic (I was very conscious of phlegm). "Well," I said importantly, "the third year is honest-to-goodness *medicine*. If you, for example, had learned what I have learned, you could dump a lot of these *romantic* notions of yours."

"Oooo?" she encouraged.

"Why just the other day I was in the O.R., which is to say the operating room, and I helped Dr. Sumner Fletcher perform a very delicate D-and-C, which is to say, a dilatation-and-curettage."

"Oh, *yes*," she said, and her eyes at that moment, it seemed to me, became infinitely more limpid.

"People on the outside seem to think third-year medical students don't get to do much in the way of operating, but this is a serious misconception."

"I understand," she said, and from her intense look, it was clear that she did.

"You probably don't know much about Dr. Sumner Fletcher," I continued, "but he is the kind of father figure, or whatever, you imagine when you think of *The Surgeon*. You really have to hand it to the surgeons; there is electricity in the air in the O.R., there *really* is. Not real electricity, of course, ha ha, or else, well, you know — explosions and things."

She smiled at my little joke. I smiled hugely.

"I was at the Lying-In, reading a paper on the

vernix caseosa, when Dr. Fletcher paged me from the O.R. And while I scrubbed, Dr. Fletcher prepped the patient for the D-and-C and told Miss Favaro, the O.R. nurse, to get ready for a particularly tricky D-and-C."

The girl was looking more intense and leaning forward expectantly.

"Well, I soothed the patient — she was pretty apprehensive — a little laying on of hands, you know, and all, and the anesthesiologist injected a little pentobarbital sodium — a little *truth serum* — and then Dr. Fletcher dilated and curetted for a long while."

"And then," she said breathlessly, "and then?"

"What do you mean — 'and then?' Isn't that enough? It isn't as if a D-and-C were done every day, you know."

But it was too late. Her words had destroyed the strange animal magnetism which had drawn us together.

PEPPER DAVIS '63

Regional activities:

The Proper Bostonian in New York

A record attendance turned out to make this particular meeting as successful as any in the annals of the Harvard Medical Society of New York. 140 members attended the dinner.

President Benjamin Carey '32 announced the donation, upon direction of the Executive Committee, of \$1000 to the Thomas H. Lanman Memorial Scholarship Fund, an action which met with great approval from the floor.

The speaker of the evening was Mr. Cleveland Amory, "Proper Bostonian." Words are impossible to depict Mr. Amory or to do any justice to his great wit and sheer artistry in the portrayal of the life he has known. The entire group was enthralled and, within a few days after, several letters came indicating great approval; in general one can only say that the funny bones of everyone in the entire room were "tickled" beyond any anticipation.

This was an outstanding evening, Secretary-Treasurer Harvey Collins '43B wrote, one of gastronomic delight and intellectual pabulum of hilarious and magnificent farinaceous quality.



SNOWMEN MEDICINE AND MOUNTAINS

Abominable Snowmen,
High-altitude Medicine
and the Highest Peaks in the Himalayas

Thomas O. Nevison, Jr. '56



The Silver Hut at 19,000 feet. The bulk of research work was done here.

THE Christmas tree sparkled across the warm hut. From outside came the sound of skiers, returning from the day's last run. As we settled back, glasses were filled and a sumptuous meal laid before us. The roast was yak; the shrimp and vegetables had been rehydrated a few

Dr. Nevison is a graduate of Harvard College, Harvard Medical School, and Harvard School of Public Health. He was medical director and a climbing member of the 1958 American Karakoram Expedition which made the first ascent of Gasherbrum I, 26,470 feet. This is the highest peak ever climbed by an American expedition. (See Harvard Public Health Alumni Bulletin, November, 1958, "Something Hidden.") From 1959 to September 1961, he was a member of the Physiology-Biophysics Branch at the USAF Aerospace Medical Center, San Antonio, Texas, and was the official USAF representative to Sir Edmund Hillary's 1960-61 Himalayan Scientific and Mountaineering Expedition. On this expedition, Dr. Nevison climbed without oxygen to approximately 27,450 feet, equaling the altitude record for American mountaineers. Dr. Nevison is now a staff member of the Lovelace Foundation, Department of Aerospace Medicine and Bio-astronautics, Albuquerque, New Mexico.

minutes earlier; and the little silver hut was perched on the brink of a glittering ice cliff. We were ten scientists and a handful of sherpas isolated at 19,000 feet, a few miles from Mount Everest.

The 1960-61 Himalayan Scientific and Mountaineering Expedition was originally conceived in the Antarctic, years earlier, by Sir Edmund Hillary and Dr. Griffith Pugh. In its final form, it was an enormous undertaking, supported by the publishers of World Book Encyclopedia.

The principle objectives of the nine-month expedition were:

1. To clarify the legend of the Yeti or Abominable Snowman.
2. To conduct medical and physiological endurance studies over longer periods and at higher altitudes than previously possible.
3. To attempt to ascend 27,790-foot Mt. Makalu, the world's fifth highest mountain, without oxygen.
4. To conduct glaciological and solar radiation studies.

My own interest in the expedition began early in 1960 when Sir Edmund Hillary invited the U. S. Air Force to participate in the scientific program. We were interested in the problems of acclimatization and prolonged



Three of the New Zealand members of Hillary Expedition (left to right), Peter Mulgrew, Pat Barcham, Mike Gill. In background is mani (prayer) wall.

exposure to high altitudes. Such research cannot be duplicated in altitude chambers because of the prohibitive manpower and expense involved in a long-term study of this type. The plan was to maintain six men for approximately three months at the 19,000-foot hut, augmented by members based at lower camps, and by part-time wintering members. In retrospect, this was an incredible plan — something like setting up a lunar station. In the first place, a prefabricated sectional hut had to be designed that could at once: 1) be easily constructed by hypoxic men in one day; 2) be lightweight, yet withstand snow, cold and high winds; 3) have a very high insulation factor and accommodate a stove which would burn efficiently and safely at 19,000 feet. The solution was a cylindrical structure, like an airplane fuselage, composed of over 100 lightweight, insulated sections. There were a stove, 8 bunks, and a laboratory area.

But this was literally the beginning. Seven DC-3 loads, a year's supply of food and equipment had to be transported to Nepal and then carried on foot by native porters for 170 miles on up to a hut site nearly four miles high.

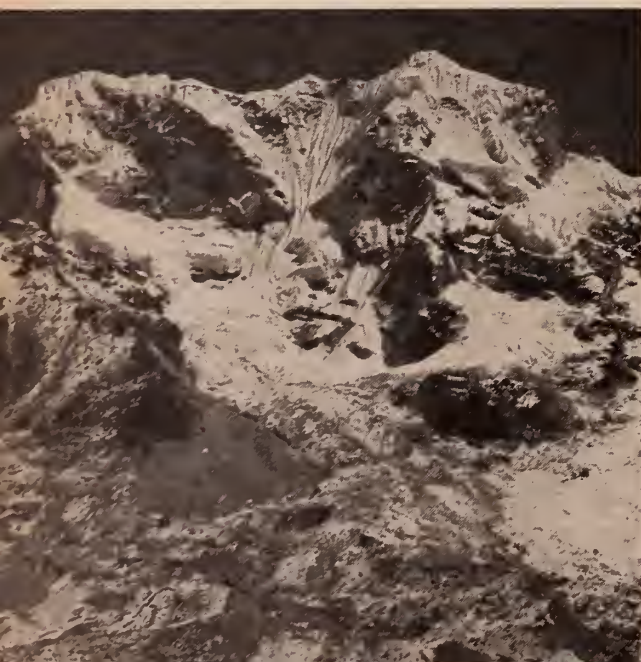
SNOWMEN

And so I found myself threading my way last September through the steaming, leech-ridden jungles of Nepal, lashed by the final monsoon rains; later, I picked my way up along a slippery trail etched into the side of a canyon wall. At length, our party arrived in the high Rolwaling Valley, just a few miles from Tibet, and reputedly the home of the Abominable Snowman. While the main party had gone ahead to locate and prepare the hut sites, our smaller party, led by Hillary, was to search for evidence of the "Yeti." All of us had open minds about the Snowman and most of us had storybook hopes of finding one. We were well organized for the hunt. Marlin Perkins, Director of the Chicago Lincoln Park Zoo, was our zoologist, and Desmond Doig, our writer, spoke fluent Nepali, a tremendous advantage in interrogating the natives. In addition, we were equipped with self-tripping flash cameras, powerful telescopes, and hypodermic-firing "capture" guns.

There was considerable evidence in favor of some sort of bear-like or anthropoid species roaming the Himalayas. These data were so conflicting, however, that two or even four varieties of snowmen have sometimes been postulated to cover all of the "evidence." The natives believe implicitly in snowmen and, therefore, any unexplained noise, track, skin, or other phenomenon immediately becomes part of their snowman dossier.* Briefly, we have explained three of the strongest bits of pro-snowman evidence as follows:

Footprints: Our party encountered several sets of typical "snowman tracks" within a few miles of and at essentially the same time of year as the classical track found by

*The results of our "Yeti" investigation have been described in detail in the *Life Magazine* article of January 13, 1961.



Wall of cliffs towers above Ripimu Valley, where "Yeti" tracks were found.

Shipton and Ward in 1953. The footprints were small and rounded, like those of a small 4-legged animal, where they were protected from the sun. When exposed to the sun, however, the tracks were elongated in the direction of the rays of the afternoon sun. In some cases, the prints were elongated at right angles to the trend of the steps (in which case our sherpas insisted that the snowman had walked sideways). Where the tracks were elongated in the direction of the trend of the steps, the footprints were strikingly anthropoid in appearance.

Furs and skins: We obtained three separate furs, all of which were unanimously identified by the natives as belonging to the "chuteh" (one variety of snowman). These were demonstrated to be Tibetan blue bear skins.

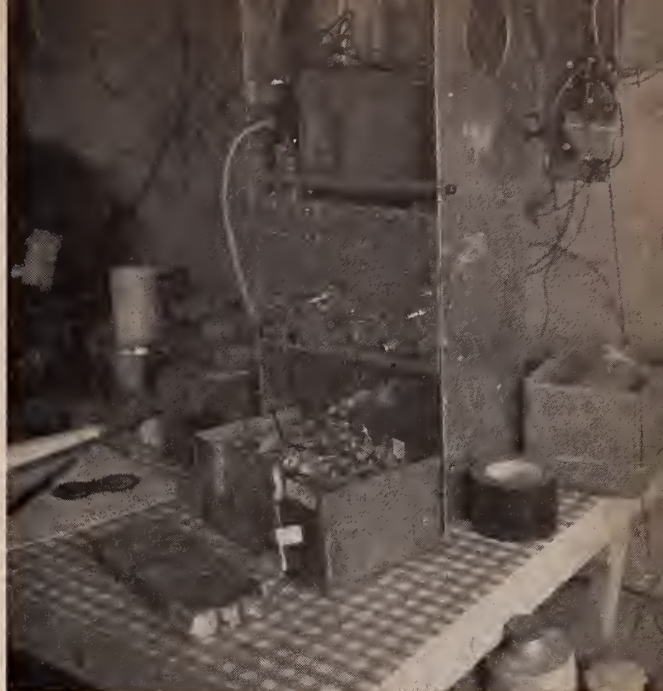
The famed Yeti scalps: We examined three conical-shaped "scalps" alleged to have come from snowmen. One was a crude, sewn-together imitation of the other two. The expedition was given permission to borrow one of the two "real" scalps. This was taken to the United States and to Europe and was shown to be not a scalp at all, but a portion of skin from the back of a serow goat which had been cleverly stretched over a pointed form until it retained its conical shape. In fact, Perkins and Doig used this technique to manufacture a reasonably good replica of the original "scalps."

After the Yeti hunt, we left the Rolwaling Valley by a very high pass, the Tesi Lapcha. During the better part of two days, the route was menaced by randomly falling rocks and small avalanches. This is a very unhealthy and difficult route by ordinary standards, but it saves almost two weeks' travel.

Immediately after crossing this pass, one of the New Zealanders, Pat Barcham, and I took a week's vacation and explored an area slightly west of Mt. Everest. We visited several fascinating deserted valleys, their slopes covered with rhododendron, bamboo, and deciduous trees, beautiful in their fall colors. We even came to a place, a pass, called *Changri La!* The climax of our trip was the ascent of an unclimbed peak 20,240 feet high, with a fabulous view of Mt. Everest, Lhotse, Makalu, and Cho Oyu, four of the world's six highest peaks. This was so spectacular that I took over 80 photographs from this point.

MEDICINE

The second phase of the expedition began in December with the completion of a small frame hut at 17,800 feet and our main prefabricated hut at 19,000 feet. During the wintering period, we had, at various times, up to seven physicians, one medical student, one glaciologist, and a building contractor who produced things like laboratory furniture out of the literally thin air. The scientific work was directed by Dr. Griffith Pugh. The glaciologist, Barry Bishop, and I were the only representatives of the United States. The remaining investigators were all from England, Australia, New Zealand, and India. It would be difficult to describe all of the medical activity, especial-



"Frankenstein" in Silver Hut, 19,000 feet. Subjects' chest belt can be seen top right of instrument. Batteries are on the table, control panel is above batteries, photo oscillograph (less film magazine) on top.

"Yeti scalp" held by sherpa, Annallu. This is not a scalp but skin from a serow goat, stretched into conical shape. Annallu climbed to 27,450 feet with the author, without oxygen.





"Snowman" footprint found at 18,000 feet in Ripimu Valley. Ice axe shown for comparison. Track is made by fox or small animal, elongated by sun.

"One of my favorites" — Everest (center) and Lhotse (right), world's first and fourth highest peaks, as seen from summit of 20,240-foot peak climbed by author and New Zealander, Pat Barcham.



ly since I was absent for two months of the winter. A partial list of our work is as follows:

- Hematocrit
- Hemoglobin
- Erythrocyte Count
- Blood Volume (carbon monoxide)
- Blood Oxygen Saturation (oximeter)
- Total Body Water (D_2O)*
- Water Flux (D_2O)*

Cardiac output during work at altitude (acetylene method)

Heart Rate, Respiratory Minute Volume, Metabolism, during work on stationary bicycle at altitudes from sea level to 24,500 feet

Alveolar gas sampling at altitudes to 25,800 feet

Carbon Monoxide diffusing capacity at sea level, 15,000 feet and 19,000 feet

Ventilatory response to various O_2 - CO_2 mixtures at sea level and 19,000 feet

Serial changes in EKG on prolonged exposure to high altitude

Bioinstrumentation experiment: Recording of EKG, Phonocardiogram, Respiration, Respiratory Minute Volume, and 2 channels of EEG*

EEG's before and after exposure to extremely high altitude (up to 27,450 feet)*

Report on morbidity and clinical problems

Psychometric tests: card sorting, flicker fusion, and visual numerical problem with audio distraction task

Provisional results of the deuterium study show no dehydration at any of the times measurements were taken: on acute exposure to altitude, after acclimatization, and after a severe mountain ascent.

For the bioinstrumentation experiment, a complex portable, multi-channel recording system had been constructed at the USAF School of Aerospace Medicine. The instrument utilized many of the same components and techniques employed in the space flights of the monkeys "SAM" and "Miss SAM." The human subject wore a chest strap which held a microphone for heart sounds, anterior and posterior EKG electrodes, and a potentiometer for qualitative measurement of respiration. EEG electrodes were needles. Anterior and posterior leads on the left side were used routinely. Ventilation, when recorded, was measured by a modified Wright respirometer attached to a lightweight mask. This device supplied an electrical impulse for each liter of expired gas. A temperature probe, polarographic oxygen partial-pressure sensor, and Hastings electronic manometer were also available. Finally, the subject wore a vest with four preamplifiers and a junction box. A 100-foot umbilical cable led from the junction box to a lightweight control and recording unit which also contained all of the required batteries. This

*The author was responsible for the deuterium work and the bioinstrumentation and EEG experiments (in conjunction with Dr. James Roberts, Dr. Rolf Scherman, Mr. Lackey, Mr. Robert Adams, and Mr. James Dickey of the School of Aerospace Medicine, USAF).

allowed the subject to pedal a bicycle or to rest in any convenient spot without moving the recorder.

Data were recorded on a small 12-channel photo oscillograph at one inch per second. Twelve minutes of recording were available on one roll of paper. The control unit also had a time pulse circuit, ambient temperature transducer, and absolute pressure transducer. Finally, a changing bag and specially constructed portable developing tank allowed the records to be processed in the field. This instrument was understandably termed "Frankenstein" by my victims. Except for one fire caused by a short circuit across Frankenstein's incredible silver batteries, the monster worked like a charm.

The voluminous data from this instrument have not been fully evaluated; however, the EEG's show a lack of the hypoxic changes in the acclimatized subjects which would have been expected on acute exposure to similar altitudes. Another interesting finding is that the heart rate during maximal exercise at 19,000 feet rarely got as high as 150, and was usually considerably less. There is a wealth of information in these recordings, but the job of digitalizing nearly six hours' worth of analogue data was almost overwhelming. Because these records include some of the highest known measurements on humans (one of the records was obtained at 24,500 feet!), the author invites suggestions as to their further utilization.

MOUNTAINS

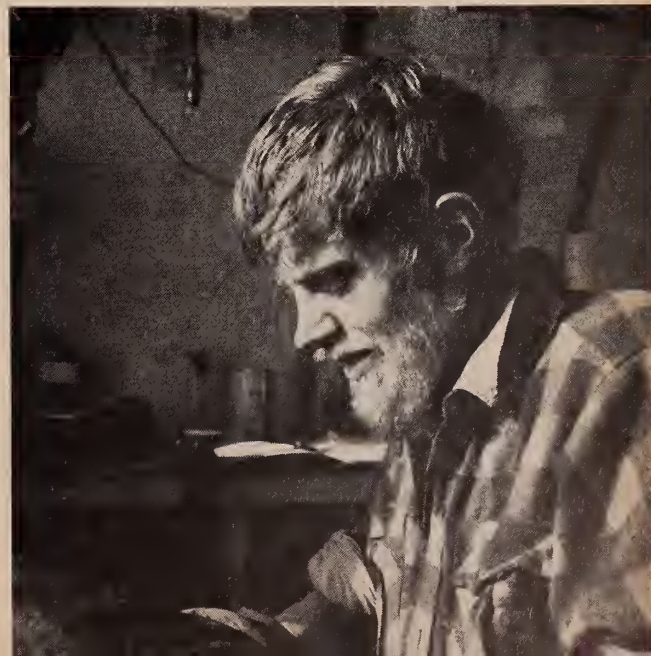
The third phase of the expedition was to be an ascent of 27,790-foot Mt. Makalu without oxygen. Medical oxygen would be available for emergency use only. We hoped to climb to an altitude at which an unacclimatized flyer would become unconscious in two or three minutes. The build-up and climb began in mid-April and went very smoothly at first; in fact, we took Frankenstein and a bicycle ergometer to 24,500 feet and actually got some measurements. Then things began to go wrong, however. The first blow was dealt to our leader, Sir Edmund Hillary. One day, at 21,200 feet, he began to feel lethargic and tired. The following day he descended to 19,000 feet and that night experienced a cerebro-vascular accident which resulted in temporary aphasia. This necessitated his prompt evacuation to lower altitude, along with one of the physicians. A few days later, two more of the sahibs experienced a minor fall at nearly 26,000 feet, and returned exhausted with minor frostbite.

The final blow occurred during a summit attempt by Peter Mulgrew and myself. We had with us six sherpas. Pete and I and one of the sherpas had planned to conserve every possible ounce of strength for the final day's climb. This would be from our highest camp at 27,000 feet to the summit, 790 feet higher. We had come to realize that high climbing without oxygen is a race to get up and back down as quickly as possible and with a minimum of effort before deterioration becomes disabling. Mulgrew and I, therefore, were climbing behind the six sherpas, using their tracks to save effort. Suddenly, one



View from Camp III showing Mt. Makalu. Route skirted crevasses in foreground; ascent was begun from extreme right. Summit is high point on right.

Mad scientist (the author) loads film magazine for photo oscillograph inside Silver Hut, 19,000'.



of the sherpas slipped and we watched, openmouthed, as his rope pulled the other five off, one by one, like falling dominoes. The group slid and rolled for about 400 feet down the slope and finally came to rest on a little lip of snow. Stunned at first, we slowly realized that we must help them. The two of us climbed down to the fallen group. One by one, they were picking themselves up and by some miracle had suffered almost no injuries. One man had a sprained ankle and another had a minor scalp laceration. We sent them back down.

In the meantime, Mulgrew and I continued upward with the remaining sherpas. The loss of two men made it necessary for Pete to carry a load of about 15 pounds, and I was forced to go ahead and kick steps for the sherpas. We had not counted on this additional work, but were able to reach our proposed campsite at 27,000 feet. Incidentally, one requires about 12 respirations for each step forward under these conditions (moderately short steps, 30° slope). Pete, one of the sherpas, and I pitched our tent as the other three sherpas started down.

It is extremely difficult to maintain adequate hydration at these altitudes. Water loss is phenomenal because of the very dry air and extremely large ventilation. Every drop of water consumed must be melted from snow, and it is only possible to make up this water loss in the evening. There is not time at breakfast and no water is available during the day. A canteen would quickly freeze.

The next morning, Mulgrew was feeling somewhat nauseated. We felt that this was probably due to the altitude and there was no doubt in his mind about continuing. (At this point it is safe to say that neither of our judgments was worth very much.) We set out to climb the remaining 790 feet of Makalu. We continued to 27,450 feet at which point it was very obvious that Pete could not continue. In fact, it seemed doubtful whether he could even get down. Reluctantly, I gave him a dexadrine, and the three of us slowly returned to 27,000-foot camp.

The next morning, Mulgrew was again nauseated and "vomited" some brownish material. (He may have coughed this up.) The two of us started down, along with our sherpa. Very soon, Pete stated that he had an excruciating "abdominal" pain and that he could not continue. The sherpa and I added the contents of Mulgrew's rucksack (sleeping bags) to our own and somehow managed to get him to a small level spot at about 26,250 feet. We placed him, fully clothed, inside two sleeping bags. I sent the sherpa down to send up help, and particularly asked for a tent, some oxygen, and a stove with which to obtain water. In the meantime, I tried in vain to dig a snow cave in case help did not reach us. Eventually, two sherpas did arrive with a tent, a small amount of oxygen, but no stove. We were able to pitch the tent and get Pete out of his sleeping bags and back into them again inside the tent. He could only move with the aid of oxygen.

Mulgrew was ultimately carried down from this point

with great difficulty and was evacuated by helicopter to a hospital ten days later. He had survived a pulmonary infarct experienced at about 27,000 feet! He has subsequently had a portion of his right lung resected to remove an abscess. Both legs have been amputated below the knee because of frostbite secondary to shock and reduced heat production following his pulmonary infarct.

During the night spent at our emergency camp, I undoubtedly experienced an attack of acute pulmonary edema* caused by the unusual exertion in evacuating Pete Mulgrew and in attempting to dig the snow cave. I had no apparent fever and no chills, but a rather sudden increase in a dry cough of many weeks' duration. The cough came on after heavy work at very high altitudes, and was almost non-productive (we were, however, badly dehydrated), but was deep, suffocating, and "felt" alveolar and not bronchial or tracheal. I was orthopneic for several hours, and extremely anxious. Next morning I produced some frothy, pinkish sputum and while descending I had extreme exertional dyspnea; however, descent to a lower altitude, oxygen, hydration, and prophylactic tetracycline quickly restored me.

Our expedition suffered an unusually high incidence of serious medical problems. The thrombotic problems were undoubtedly due, in part, to polycythemia, acute dehydration and stress, while hypoxia can be implicated in the cases of pulmonary edema.

Did prolonged residence at 19,000 feet improve the performance of climbers on Makalu? Probably not. Comparing the wintering members with those who had joined the expedition solely for the Makalu climb, or those of us who withdrew for part of the winter, I would say that the wintering members certainly had an initial advantage over the rest of us, but if anything, they seemed to have less reserve. Fortunately, the two of us who climbed the highest were not members of the wintering group.

In other words, prolonged residence at an altitude of 19,000 feet or more does result in deterioration rather than continued acclimatization. A small puppy which lived at the Silver Hut for many months failed to grow until he was taken back down to a lower camp. Undoubtedly, the physiological work will add a great deal to our knowledge of high altitude, but possibly not enough to justify the time spent and the illnesses suffered by the expedition members. (I have only mentioned a few of the more serious medical problems.) Hillary has recovered completely, but he would be unwise to do any more high-altitude climbing.

I'm sure none of us will soon forget our experience. The only certain conclusion is that mountaineers should either carry oxygen or abandon the high regions to the Snowmen.

*See Hultgren, Herbert, et al. *High Altitude Pulmonary Edema Medicine* 40:289-313, September 1961.

(Right) Marlin Perkins on left and Desmond Doig discuss "Chuteh" fur with natives of Rolwaling Valley.





Celebrating the 150th Anniversary of the founding of The New England Journal of Medicine — Dr. Joseph Garland '19, highly esteemed Editor of our relatively esteemed contemporary.

DIAGNOSIS DEFERRED: Relatively Esteemed Contemporary

A fresh breeze, according to the vernacular, stirring about a hundred and fifty years ago, was responsible for a small outbreak of organized efforts at improving health conditions in the north-by-northeastern section of the Atlantic seaboard at that time. Some of these attempts have been mentioned in previous issues of the *Bulletin* — especially the founding of the Yale Medical School and of the Massachusetts General Hospital, the elusive dates of their emergence bouncing about like hard peas on a hot griddle — and the more clearly documented establishment of the Boylston Medical Society, the semitercentenary observance of which, last May, was duly noted. But this was the product of determined young undergraduates, their thoughts fixed on the shining motto, "Veritas."

Still another sesquicentennial occasion is at hand — that of the founding of the *New England Journal of Medicine*, its roots so deeply embedded in the soil of Boston and its New England environs that an attempt to loosen them would probably shake dirt where least expected. Due homage having been paid to this organizational accomplishment, so stubbornly resistant to complete decay, relief from such festal opportunities may be expected until the quartersexcentenary celebration of the Treaty of Ghent, some three years hence.

The intellectual capital of the country in 1812 was, by common consent of all its inhabitants, the City of Fraternal Affection in Penn's Woods. True, Harvard College had been a going concern since 1636 and its Medical School since 1782, a year after the founding of the Massachusetts Medical Society and two years after that of the American Academy of Arts and Sciences, also in Boston. The American Revolution not having ground to its halt until 1783, it becomes obvious that every misunderstanding with the mother country was the occasion of some sort of a cultural eruption in Boston.

An intellectual awareness, therefore, became evident at the time of Mr. Madison's War, but commerce was still king on the Shawmut Peninsula, and its beneficiaries drove out to their country estates beyond Muddy River satisfied that even Philadelphia could not outdo them in gentility.

The first and subsequent issues of the quarterly *New England Journal of Medicine and Surgery and the Collateral Branches of Science*, Conducted by a Number of Physicians, and containing the motto in Latin — a language since abandoned — *Homo naturae minister et interpres tantum facit et intelligit, quantum de naturae ordine, re vel mente, observaverit; nec amplius scit aut potest*, whatever that means, were published in Boston by T. B. Wait and Company. The project, as everyone knows, was put on the road by John Collins Warren and James Jackson, friends, contemporaneous clinical counterparts, coprofessors, cofounders of the Massachusetts General Hospital, coauthors of the Massachusetts Pharmacopoeia, presidents, each in his turn, of the Boylston Society and of the Massachusetts Medical Society and so forth.

Students together at the end of the century under Sir Astley Cooper at Guy's Hospital, these amiable young gentlemen temporarily separated when this educational experience came to its conclusion. Jackson returned to Boston in 1800 and started in practice; the more affluent Warren took a medical degree at Edinburgh and came home in 1802. In the period between 1803 and 1820 they put the Massachusetts Medical Society on its feet and the Harvard Medical School on the map as well as co-operating in the ventures listed above.

Chronologically, the *Edinburgh Medical and Surgical Journal* was one up on the young Bostonians, having been founded in January, 1805; it closed its shutters in December, 1954, having kept its own sesquicentennial rendezvous in that month. In January, 1956, it happily re-emerged in conjunction with *The Glasgow Medical Journal* as the *Scottish Medical Journal*. The only other antecedent journal that survived to modern times, so far as the records show, was the *Medical Museum*, established in Philadelphia in 1804, discontinuing in 1813 to be revived in 1820 and changed to the current *American Journal of Medical Sciences* in 1827.

The owners of the *New England Journal of Medicine and Surgery* (and the Collateral Branches of Science) altered its name in 1827 to the *New England Medical Review and Journal*, purchased for \$600 the weekly *Boston*

Medical Intelligencer, which had been in publication since 1823, and combined the two, continuing them as the *Boston Medical and Surgical Journal*, as of February 19, 1828.

At this time Jackson appears to have dropped out, for Warren, John Ware and Walter Channing became the editors and proprietors, with Warren as the leading spirit. The new era was memorialized in an editorial notice:

"The proprietors of the *New England Journal of Medicine and Surgery* have been induced by important considerations to give it a new form. Seventeen years have expired since the publication of that journal, the first periodical work on medicine in the New England states. * * * The list of subscribers being now large, it will go forward in some shape or other; and efforts will not be wanting to make it useful. As it is devoted to no party or institution, the Editors offer it to the medical profession as a vehicle for such publications as they may wish to make; and they hope by it to bring out the talent of this part of the country. It is their intention to introduce the practice of the Massachusetts General Hospital, especially the surgical part, whenever anything interesting occurs in it; and to go back through the journals of that institution for the selection of interesting facts."

The lead article in the first issue of the *Boston Medical and Surgical Journal* was "Cases of Neuralgia, or Painful Affections of Nerves," by John C. Warren; that in the *New England Journal of Medicine and Surgery* had been "Remarks on Angina Pectoris," by his father.

In 1914 the Journal became the official publication of the Massachusetts Medical Society and in 1921 was purchased by that powerful organization for a single silver dollar, which, rumor hath it, never passed hands. And in 1928, as part of the centennial observance of the union of the *New England Journal of Medicine and Surgery* and the *Intelligencer*, the name was changed back almost to the original.

In the immortal words of Horace, *Illegitimes non carborundum!*

Editorial

In a lecture delivered to medical students of the University of Edinburgh in 1910 Sir William Osler said, "Man can do a great deal by observation and thinking, but with them alone he cannot unravel the mysteries of nature. Had it been possible, the Greeks would have done it; and could Plato and Aristotle have grasped the value of experiment in the progress of human knowledge the course of European history might have been very different." For generations of medical students and their teachers, Sir William Osler has been the prototype of the good and wise physician, well versed in clinical medicine yet endowed with a unique ability to understand and treat the "whole patient" as well as his disease.

What Osler said on this occasion in his "Lay Sermon" has pertinence for the present controversy about the teaching of medicine. In some quarters dissatisfaction has been expressed with current medical education, because it is said that medical students are being prepared for a career in research rather than in the care of patients. It seems to us impotent to say once more that the two are not mutually exclusive. The ability to plan an experiment and to critically evaluate data does not preclude careful and accurate analysis of the patient and his disease. Skill in observation and interpretation acquired in remote fields can be important in others. Pasteur's experience in crystallography did not detract from his ability to unravel the afflictions of grapes or of men. The experienced beekeeper has prepared himself in part for observation and interpretation of signs and symptoms of human disease. What has been learned in the laboratory need not be wasted at the bedside.

For past generations, perhaps, the ideal of patient care is represented by Sir Luke Fields's painting "the Doctor." The portrayal of the bearded doctor, seated by the bedside watching a feverish child, represented the essence of the physician's concern for his patient. What is frequently forgotten, however, is that there is in this portrait a kernel of therapeutic impotence and frustration. Neither the clinical acumen of the physician nor his patient's trust and confidence can stay the proliferation of the hemolytic streptococcus.

The other extreme might be portrayed by the brisk bespectacled young scientist, immaculate in his gleaming laboratory, test tube in hand. It is possible that some facet of his painstaking research might result in a contribution that would ameliorate the consequences of streptococcal infections in millions of children whom he had never seen. Certainly the images of these two men can be blended into a picture combining the best of both. The cardiac physiologist must interpret his catheter data in terms of the patient's symptoms and physical findings. The biochemically oriented internist knows that the frequent lack of correlation between the clinical status and the N.P.N. Knowledge of the patient contributes to the evaluation of the laboratory data and the latter extends the clinical information.

Advances in medical science have made possible the diagnosis and cure of afflic-



Bettman Archive

The Doctor. Painting by Sir Luke Fields (1844-1927)

tions which were scarcely recognized by physicians in Osler's day. And the published information in medical and related fields has become impossible for any one individual to assimilate. It is the function of the teacher of medicine, therefore, to prepare the student to critically evaluate such information and to employ what is worthwhile. There is no better training for such evaluation than a precise and disciplined approach to a medical or related research problem. Frequently, however, the best trained physician may realize that there is no specific remedy for the patient's disease and that he cannot succinctly categorize the illness. Under these circumstances he must be able to treat the patient as an individual, not as a disease, and this aspect of medicine is an equally important function of the teacher. The teaching of these diverse facets of medicine requires neither diverse categories of students nor teachers. In the final analysis the best educator is the man who teaches his students to learn and the process of learning need be restricted neither to the use of isotopes nor stethoscopes. One does not know how much the ability to establish rapport with and interest in the patient can be taught and how much of it is instinctive. In either case, it must be nurtured. The good clinical investigator who has these attributes in abundance will take excellent care of his patients, no matter how extensive his bibliography in the *Journal of Experimental Medicine*. The individual physician is, and always has been, more important than any aspect of his training.

J. P. M.

*"Ten quarts of scotch
and ten days later . . ."*



**"ALL KINDS OF LITERATURE
EXCEPT
THE KIND THAT**

*"Haunted, like a shining skin of an opulent eggplant by the clay-colored echo of a final and unbreakable promise."**

WITH these words a critic tries desperately to convey the magnificence of an abstract expressionist painting that he is reviewing. How is an intelligent human expected to respond? Imagine that one of our professors at H.M.S. had dared to place such a statement in a lecture on "The Art of Medicine," or "Medical Art Through the Ages." We might have taken it for the moment, but when we had returned to our quarters in Vanderbilt Hall and collected our senses over the notes, we would most certainly have decided that this bird was going off his rocker.

Over the years, I have been taken in by the critics who write about music, painting and literature; and when I did not understand their high-sounding phrases, I attributed it to my own lack of sophistication or to a taste much stunted by impact with too great a body of scientific knowledge. Many of us whose major time is occupied with care of the sick get no further in our approach to modern art than a sense of irritation and frustration. When we turn to the critics for help, we find ourselves thwarted by meaningless phrases such as "the shining skin of an opulent eggplant," etc.

It is refreshing to find an articulate spokesman who puts into language a hunch that we have nursed but dared not speak. John Canaday of *The New York Times* writes of the modern non-representational school of painting: "The bulk of abstract art in America has followed the course of least resistance and quickest profit; it allows exceptional tolerance for incompetence and deception; it is fraud at worst and gullibility at best."

However, the dragon will not be slain by such a sure, single blow. Gabo, who is a most enthusiastic practitioner of abstract expressionism, says,

"We know only what we do, what we make, what we construct; and all that we make, all that we construct, are realities. I call them images, not in Plato's sense (namely, that they are only reflections of reality) but I hold that these images are reality itself and that there is no reality except when in our creative process we change the image; then we have created new realities."†

*Quoted by William Jay Smith in *The Spectra Hoax*.

†Quoted by Herbert Read, *Modern Art*, Noonday Press, p. 97.

ARE GOOD

BORES YOU . . . "

— VOLTAIRE

Dr. Lium practices surgery in Portsmouth, York and Exeter, New Hampshire. In 1959-1960, he was President of the Harvard Medical Alumni Association.



"She is there! She is not there!"

This is a very liberal creed and accounts for much of what is obscure in modern art, for the artist can choose his own idiom, code or language, and the audience must decipher the message as best it can. Those of us who have only spare time for the arts, however, cannot always decodify what at first appears to be mumbo-jumbo, and we must turn to the critics for enlightenment. But even they seem confused. A few years ago, a jury selected for first prize a canvas created quite accidentally by a group of house painters. A practical joker had framed an old burlap bag on which the men wiped their paint brushes at the end of the day, and entered it in the contest.

In thumbing through *Masters of Modern Art*, one finds a picture in color by Henri Rousseau. A dark-skinned woman, dressed in a striped garment, lies on a striped pillow. She is asleep and at her side are a mandolin and an empty vase. The moon is full, the mountains tower over the lake in the background, and there stands by her side a lion, tail high, obviously staring at the sleeping figure. Jean Cocteau wrote about this canvas,

"Why, you ask me, agree to write this preface? My reason is precise. This is a unique piece, the hub of the wheel, the dead center, the heart of the hurricane, the sleep of sleeps, the silence of silences: *La Bohémienne Endormie* by Henri Rousseau.

"This picture which surpasses painting, which soars above it, which compromises it . . . is the contrary of poetic painting, of anecdote. One is confronted rather by painted poetry, by a poetic object, by a miracle of intuitive knowledge and sincerity."

UP to now Cocteau has made good sense, and it is his privilege to take off from this platform and soar, for poets are licensed to describe subjective experiences; and he continues,

"Perhaps, in fact, this lion and this river are the dream of the sleeper. It is probably not unintentional that the painter, who never forgot a detail, has put no imprints in the sand around those sleeping feet. The gypsy did not come there. She is there. She is not there. She is in no human place. She is the secret soul of poetry, an act of faith, a proof of love."

This reminds me of Malagrida's epigram, "Speech was given to man to enable him to conceal his thoughts." For how may a woman be both in a picture, and not in a picture when the picture is of her and about her? The use of such hyperbole as "secret soul of poetry, act of faith and proof of love" to describe *La Bohémienne* borders on hokum.

That hokum can creep into the arts has been demonstrated on many occasions by the hoax, perpetrated at the hand of a sincere artist who meant to expose the irrelevance and incompetence of critics. One of the classic examples is Pierre Louÿs, who was a brilliant writer as well as a first-rate classical scholar. He faked a poem by a non-existent early Greek author and peddled it among

the European scholars, who accepted it and commented on how well it fitted into the known works of the stated author. For this bit of practical joking in a most serious field, Pierre Louÿs was never forgiven by the elite and because of it he was not admitted to the Academy.

IN our own time the school of Spectric Poetry represents one of the most successful literary hoaxes ever perpetrated. Wittner Bynner and Arthur Davidson Ficke were out of sympathy with the extremes of experimental poetry in 1916 and conceived of outdoing them by developing the Spectra School with its home in Pittsburgh, where poetry had little appeal, and hence the danger of early exposure was reduced to a minimum. They worked so intently that Mrs. Ficke chased them out of the home; whereupon they retired to a hotel room. Ten quarts of scotch and ten days later they had put together the whole school of Spectric Poetry. In his prelude to *Spectra*, Ficke wrote,

"In the first place, it speaks, to the mind, of that process of diffraction by which are disarticulated the several colored and other rays of which light is composed. It indicates our feeling that the theme of a poem is to be regarded as a prism, upon which the colorless white light of infinite existence falls and is broken up into glowing, beautiful and intelligible hues. In its second sense, the term Spectric relates to the reflex vibrations of physical sight, and suggests the luminous appearance which is seen after the exposure of the eye to intense light, and, by analogy, the after-colors of the poet's initial vision. In its third sense, Spectric connotes the overtones, adumbrations, or spectres which for the poet haunt all objects both of the seen and unseen world — those shadowy projections, sometimes grotesque, which, hovering around the real, give its full ideal significance and its poetic worth. These spectres are the manifold spell and true essence of objects, — like the magic that would inevitably encircle a mirror from the hand of Helen of Troy." . . . The insubstantiality of the poet's spectres should touch with a tremulous vibrancy of ultimate fact the reader's sense of the immediate theme."

And from Ficke's verse comes the following gem:

Anne Knish, Opus 67.*

I would not in the early morning
Start my mind on its inevitable journey
Toward the East.
There are white domes somewhere
Under that blue enameled sky, white domes, white
domes:
Therefore even the cream
Is safest yellow.
Cream is better than lemon
In tea at breakfast.
I think of tigers as eating lemons.
Thank God this tea comes from the green grocer
Not from Ceylon.

*The pen names of Ficke and Bynner were Anne Knish and Emanuel Morgan.



(left) "Il me raconte pas. Il me fait."

There is just enough sense in the introduction to *Spectra* to constitute a trap for the unsuspecting. But when each opus is read it becomes apparent that this is a strange compound of meaning and bunk. Because so much of the modern poetry was bunk, it was impossible for some of the critics to distinguish the good from the awful, and we find John Gould Fletcher speaking of the Spectrist's "vividly memorable lines," and Eunice Tietjens, associate editor of *Poetry*, wrote of *Spectra* to Mr. Morgan on May 9, 1917: "It is a real delight!"

Perhaps we should not leave this subject without a contribution from "Emanuel Morgan:"

Two cocktails round a smile,
A grapefruit after grace
Flowers in an aisle
.... Were your face.

A strap in a street-car,
A sea-fan on the sand,
A beer on a bar
.... Were your hand.

The pillar of a porch,
The tapering of an egg,
The pine of a torch
.... Were your leg.

Sun on the Hellespont
White swimmers in the bowl
Of the baptismal font
Are your soul.

WHEN we move into the area of prose, the novel, we face quite a different problem than in poetry. Whereas the great bugaboo in poetry is nonsense, the ever-present risk of a novel is boredom. Many doctors, lawyers, teachers and businessmen who spend their days with practical matters are not sleepy when they arrive home but too weary for heavy concentration, and their inclination is to pick up a good book if it is handy. Perhaps the worst impulse for good reading is a serious purpose. We do not have the minutes of the Nobel Committee, but the members have always seemed to me monstrously concerned with selection of things that instruct and not that entertain. Boccaccio and Chaucer would not have made the grade; they are far too exciting and lively. Instead we get *Dr. Zhivago* and *Sanctuary*.

Recently I took out the monthly recommendations of a literary club for the past three years. Each of these sheets was filled with eulogy for the author and his pro-

duction, and one felt that every work represented a masterpiece. Only a year after their issue, most of the titles are forgotten. The stated purpose of these committees of critics is to improve the reading taste of the public. This may well be likened to bringing up children: "The harder you try the less you succeed."

Too much of recommended reading is serious, and the critics might well benefit by the attitude of *The New Yorker*. Some years ago this magazine commented on the lengthy Encyclic on marriage issued by the Vatican, "It seems to us that His Eminence missed the most important point of all. Marriage is a lot of fun." And so is good reading.

I run across my best reading by accident, thumbing through a series of unknown titles on the shelf of the local library and striking such a goldmine of adventure as *The Colditz Story* and *Les Scandales de Clochemerle*. It would not surprise me to find *Clochemerle* read by coming generations, along with *Don Quixote* and *Tom Sawyer*. The author of *Clochemerle* is a wine salesman and develops his hilariously entertaining story around the erection of a *pissoire* in a small French village.

The arbiter of morality in *Clochemerle* is La Baronne Courtebiche, who lives in her ancestral chateau, just beyond the village. Her chief preoccupation is the girls of teen age attending the local convent school, and when one of the young ladies in her charge "gets that way" at the hand of a local boy who has had weekend leave from the Army, La Baronne summons Rose to the Chateau.

La Baronne: This must have upset you, one would think! And what could he have told you, this boy, to seduce you. Will you please explain?

Rose: He told me nothing, madame la baronne.

La Baronne: He told you nothing? And then?

Rose: (In all her disarming innocence) *Il me raconte pas. Il me fait.*

In approaching the arts, we should not be swayed by critics. Every museum from the Louvre to the smallest town has in the attic pictures galore that are gathering dust and are forgotten, and yet they constitute the masterpieces of past generations, works judged and chosen by critics. The raves that were written about James Branch Cabell in the '20's were echoed in the reading habits of the public and students. Cream of the Jest and Jurgens were *de rigueur*. Yet, the new generation shakes its head uncomprehendingly at the mention of Cabell.

One turns instinctively from the thought that art is, like fashion, subject to the vagaries of passing tastes, but history gives strong support to such a thesis. The ordinary person may have an entirely different standard for judging art than a critic, which does not mean that the work is inferior. If artists are free to express themselves in any direction that they are driven, it is our privilege to like what we hear, enjoy what we feel and fancy a good thing as we see it, and no reason need be given.



MEDICAL EDUCATION

On the Eve of Her Millenium

Stanley J. G. Nowak '26

(Below) Bialystok Medical Academy



HISTORY

Poland, whose present medical structure is the subject of this article, has had an extremely interesting political history beginning in 966 A.D. She had her age of glory especially in the 16th century as well as her tragic periods caused by incessant invasions of hostile neighbors, by the consuming Partitions of 1772-1795 and, after her rebirth in 1919, by the holocaustic destruction of 1939 to 1945. As the greatest victim of the recent German invasion, she stood to lose five and one-half million people, chiefly through genocide, while her economy was crushed to the extent of 52 billion dollars. Now a country of 30 million people about to celebrate its millenium, her erstwhile and present allies have created for her a place in the Soviet orbit.

In her historic contributions, those to science and medicine appear unique when the eye sweeps over the pageant commencing with the astronomer-physician-abbot Copernicus, who in 1543 proclaimed the heliocentric system of the universe, to Marja Sklodowska-Curie of our day. From Poland's ancient Jagiellonian University of Cracow founded in 1364, the Batory University of Wilno founded in 1578, the Jan Casimir University of Lwów founded in 1661 and the University of Warsaw founded in 1809 has flowered the impressive academic and medical tradition which pervades the halls of her present ten medical academies of Cracow, Warsaw, Posen, Łódź, Danzig, Wrocław, Lublin, Białystok, Zabrze-Rokotnice and Stettin. Wilno and Lwów, having been unilaterally ceded at Yalta, have transferred most of their faculties to Danzig and Wrocław respectively.

MEDICAL CONTRIBUTIONS

Considering only the 19th and first quarter of the 20th centuries when Poland's cultural hopes were dampened by political subjugation, she gave to medicine such leaders as surgeon LeBrun, pioneer ophthalmologist Szokalski, internist-statesman Dietl, internist Chalubinski, histologist Hoyer, premier gastrectomist Rydygier, master surgeon and experimenter Mikulicz, physiologist and co-discoverer of adrenaline Cybulski, hematologist Biernacki (who discovered the sedimentation rate), diabetic pioneer Minkowski, anatomist Teichmann-Stawiarski, orthopedist Kader, physiologist Parnas, biochemists Nencki and Marchlewski (who showed the relationship between the red blood cell and chlorophyll), pediatrician Brudzinski, premier bronchoscopist Pieniazek, pathologist Browicz, neurologist Babinski and the queen of science Sklodowska-Curie. The example of these medical-scientists is a living stream of influence and of continuing inspiration to the generation with which I had the privilege of becoming acquainted and co-existing culturally during my six months' assignment (March 1 to September 1, 1961) as visiting lecturer in surgery to Poland's ten medical academies.

N POLAND





Poland: rural —

MEDICAL EDUCATION

Under the present regime the ten Medical Academies have been divorced from the universities and by the decree of 1950 have come under the direction of the Minister of Health while the liberal arts and other faculties come under the jurisdiction of the Minister of Education. This has enabled the Minister of Health to establish medical academies in cities where no universities exist in order to accelerate the post-war need for medical expansion. The Minister of Health with the help of four or five Vice-Ministers or Under Secretaries, the Director of Higher Education and Science, and a Council of representatives from the medical faculties directs the medical educational program, the scientific programs of the Medical Academies and specially designated Institutes as well as the entire health program.

The medical scientific program of the medical academies is further developed by the Medical Section of

the Polish Academy of Science which derives its authority from the central government and is independent of the Minister of Health. This Academy of Science advises the government on the direction which medical investigation should take and also conducts research in its own Institutes (to be differentiated from the Ministerial Institutes noted above). The members of this section who are preponderantly members of the medical faculties also are, therefore, familiar with the academic programs with which the Academy of Science integrates its researches.

The Medical Academies are governed by a Rector (President or Chancellor) who is nominated by the Faculty Senate from one of its Faculty members and whose appointment is confirmed by the Minister of Health and ultimately approved by the Polish Premier. The Rector serves a term of three years, usually, but not necessarily, followed by reappointment for one or more terms. During his tenure, the Rector maintains his regular academic post to which he reverts full time after his term of office expires.

The Faculty Senate consists approximately of 12 members including a representative of the Communist Party who, although he has no vote, may wield considerable influence through the Provincial Party Committee of which he is a member.

The medical academies have from two to five Faculties or departments; namely, Medicine, Stomatology (Dentistry), Pharmacy, Pediatrics (the latter now being eliminated), Sanitation and Hygiene (in Warsaw only). The total faculty in Cracow, for example, was composed as follows in 1961:

Dr. Nowak's article is the fifth in a series written for the Harvard Medical Alumni Bulletin about medicine in East Europe. Upon invitation of the Polish Ministry of Health and under the auspices of the State Department, Dr. Nowak accepted the position of Visiting Professor in Surgery to the Medical Academies of Cracow and Warsaw and guest of the remaining eight academies for the semester March 1 to September 1, 1961. This was the first American exchange academic appointment of this tenure in Poland since World War II. A native of Chicopee Falls, Massachusetts, Dr. Nowak was a member of the Harvard Medical School Faculty from 1928 to 1947, with advancements from Assistant to Assistant Professor in Surgery. During this period, he held a Moseley Traveling Fellowship for study under Nobel Laureate, Professor Corneille Heymans in the Department of Pharmacology, Ghent, Belgium, and served in the U.S. Navy from 1943 to 1946 with assignments in Bethesda, England, and Pearl Harbor.



— and urban — a misty view of Cracow roofs.

I. *Department of Medicine*

Full Professors	18
Associate Professors	14
Docenti	16
Substitute Professors	2
Representatives in Council	2
Lecturers	8

Total Senior Faculty	60
Assistants	463

Total Medical Faculty	523
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II. Total Pharmacy	78
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III. Total Dental	52
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Total All Faculties	653
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By way of contrast, Bialystok, the recently created Academy of Medicine with only one department (medicine), has a faculty consisting, in 1961, of two Full Professors, nine Associate Professors, thirteen Docenti, 200 Assistants, making a total teaching staff of 224.

It is estimated that all ten Medical Academies together have a total of 250 Full and Associate Professors, 300 Docenti, 4,200 Assistants, totalling 4,750 academic appointees. The various Institutes have 100 Full and Associate Professors and 700 Assistants, totalling 800. Thus the Academic body in Polish medicine today numbers 5,550 under such able leaders as Ministers of Health Baranski, Sztachelski, Director of Education Tysarowski, Rectors Tochowicz of Cracow, Kacprzak of Warsaw, Manczarski of Danzig, Dega of Posen, Stefanowski of Łódź and others.

The total number of students in all departments of medicine was officially recorded in 1960-61 at 22,874. These were divided approximately as follows: Medicine 14,700, Pharmacy 4,000, Stomatology (Dentistry) 3,400, Pediatrics 774.

Females outnumber the male students in Medicine with 54 per cent enrollment. They dominate the fields of Stomatology (approximately 80 per cent) and Pharmacy (approximately 90 per cent). This female predominance (*gynecoplethos* — my own word) is less than that reported in other countries behind the Iron Curtain.

The medical academies vary in size. Warsaw and Cracow, for instance, average approximately 4,000 students each, while Bialystok in 1958-59 recorded 1369 students.

Although exact overall data were not available on the class origin of all medical students, at Bialystok the admission enrollment of 280 students in 1956-57 showed the following distribution: Intelligentsia 42.5 per cent, Tradesmen 4.3 per cent, (these two groups comprise a total middle-class 46.8 per cent), Peasants 27.14 per cent, Workers 26.07 per cent. These figures are somewhat corroborated by the distribution in the Liberal Arts Department of Warsaw University in 1961 which were reported to consist in approximate terms of 55 per cent Middle Class, 25 per cent Workers, and 20 per cent Peasant. Up to 1957 at least, there was official effort to matriculate in medicine as many youths as possible of peasants and worker origin. The students of worker-class origin in Poland are much fewer in number than in the other countries in the Soviet bloc. Furthermore, membership in the Communist Party is not a deciding factor in admission to a Medical Academy. The admission examinations, which are both oral and written, are conducted by teams who as a rule do not have the final decision on acceptance of the candidates. Failure to pass the entrance examinations bars admission of a student regardless of Party influence.

The admissions average from 200 to 400 students per academy per year with an application ratio of approximately three applications to one acceptance, showing the



Dr. Nowak operating in Warsaw Academy of Medicine in clinic of Professor Jan Nielubowicz.

COURSE OF MEDICAL STUDIES 1960-61 — KRAKOW ACADEMY OF MEDICINE

FIRST YEAR

(MEDICAL AND DENTAL STUDENTS)

Subject	Semesters I, II		Hours per Week	
	15 weeks each		Lectures	Exercises
Biology	I	II	2	2
General Chemistry	I	II	5	I-2 II-3
Medical Physics	I	II	3	2
Anatomy (Gross and Topographic)	I	II	3	6
General Introduction to Medicine	I		1	
Latin	I	II	2	
English*	I	II	2	
French*	I	II	2	
German*	I	II	2	
Russian*	I	II	2	
Military Training	I	II		I 0-4 II 4-0 (estim.)
Physical Training	I	II		2

*Elective

SECOND YEAR

(MEDICAL AND DENTAL STUDENTS)

Histology and Embryology	I	II	I-3 II-2	I-2 II-3
Physiological Chemistry	I	II	4	3
Physiology	I	II	4	II-3
Anatomy, Gross and Topographic	I	II	I-1	I-5 II-5
Military Training	I	II		I 4-0 II 0-4 (estim.)
Physical Training	I	II		2

THIRD YEAR

(MEDICAL AND DENTAL STUDENTS)

Microbiology	I	II	2	3
Physiopathology	I	II	3	
Pharmacology		II	3	II-1
Pathological Anatomy	I	II	3	2
Medicine	I	II	3	3
Surgery	I	II	2	I-2 II-1
History of Medicine*	I	II	1	
Problems of Marxism	I	II	2	
Dental Prosthesis**	I	II	I-1	II-3
Non-operative Stomatology**	I	II	1	3
Military Training	I	II		I 0-4 II 4-0 (estim.)

*Elective

**For Dental Students

FOURTH YEAR

(MEDICAL STUDENTS)*

Subject	Semesters I, II		Hours per Week	
	15 weeks each		Lectures	Exercises
Pharmacology	I	II	I-3 II-2	1
Hygiene	I	II	3	I-2 II-1
Obstetrics and Gynecology	I	II	I-2 II-3	
Medicine	I	II	3	I-2 II-3
Surgery	I	II	3	2
Urology	I	II	1	
Pediatrics and Pediatric Surgery	I	II	2	I-1 II-2
Dermatology	I	II	2	1
Radiology	I	II	I-3	I-2 II-1
Neurology	I	II	I-2 II-1	I-1 II-2
Military Medicine	I	II		I 0-4 II 0-4 (estim.)

*Dental Students separately assigned for 4th and 5th years.

FIFTH YEAR

(MEDICAL STUDENTS)

Obstetrics and Gynecology	I		3	
Infectious Diseases and Epidemiology	I	II	I-2 II-1	2
Pediatrics	I	II	2	I-1 II-2
Medicine	I	II	3	I-3 II-4
Surgery	I	II	2	I-3 II-4
Orthopedics and Trauma Motor System	I	II	1	
Psychiatry	I	II	2	II-2
Forensic Medicine	I	II	2	II-2
Ophthalmology	I	II	I-2	II-2
Stomatology	I		I-1	
Laryngology		II	II-2	II-2
Pulmonary Tuberculosis	I		I-1	I-1
Post-Mortem Technique		II		II-2
Military Medicine	I	II		I 0-4 II 0-4 (estim.)
English*	I	II	2	
French*	I	II	2	
German*	I	II	2	

*Elective

SIXTH YEAR

(MEDICAL STUDENTS)

Devoted to Rotating Internship as required part of Medical course.



strong attraction of the Polish youth toward the profession of medicine.

Approximately one-third of the students live in medical dormitories. At least over one-half of the total student body receive stipends which cover the cost of meals and/or dormitory life. Tuition is free to all students, while medical textbooks, which are very inexpensive, must be purchased. Some of the newer dormitories, such as those in Danzig, are most attractive, housing approximately 900 students — three students per room with separate study rooms, and dining hall accommodation for 400 students at one sitting. In Bialystok, the modern dormitory also has a gymnasium, a basketball court and a club room for dancing and gatherings.

The medical course in Poland consists of five years of basic and clinical studies followed by a required sixth year of rotating clinical work in a hospital. After the sixth year the candidate takes his examination for a degree of Physician. The degree of Doctor of Medicine is obtained only after approximately ten years of academic work and presentation of an original thesis.

Every summer after the completion of the second year, medical students spend one month as medical counsellors either at children's camps or as community hygiene officers. During a three-week period they are also provided recreational-physical educational facilities at usually one of the better health or lake resorts.

The placement of medical-school graduates is voluntary. Space does not permit a detailed description of the national health program and its structure, from the village-outpost physician to Ordinarius in a provincial general hospital.

BELLA, HORRIDA BELLA

In the immediate post-war period the medical schools and hospitals posed, of course, a staggering picture of demolished, looted, defiled structures and rodent-infested skeletal walls and rubble. From this scene of desolation Poland's medical Phoenix was to arise. In Danzig, lectures were given in windowless unheated halls, with lecturer and students sitting in overcoats. In Wroclaw (Breslau) the advance guard of the faculty expelled from Lwów lived for weeks in railroad cars because the destruction of the university and clinics, including the last of Mikulicz's clinics, was so extensive. In Warsaw, the brilliant medical historian and bibliographer, Professor Konopka carried medical books on his back from various cached hideouts which had not been looted to the Central Medical Library of Warsaw. In Cracow, the Medical Academy awaited the return of its surviving faculty who had been brutally imprisoned in Sachsenhausen and Orienburg since 1939 after being summoned by German authorities under the false pretenses to an "organizational meeting." Other academies had similar or worse experiences, especially Lwów.

(left) Monument of the Battle of Grünwald, commemorating the Polish victory over the Teutonic Knights in 1410.

Many of Poland's great scholars also succumbed to the inhumanities of Auschwitz, of Majdanek and other prisons. Of 12,000 physicians, only 6,000 remained to restore the flow of six hundred years of medical education and tradition. It is humanly pardonable that the quality of medical care suffered, that hope and idealism languished while macabre realism stalked. The westward bursting dikes of typhus and plague had to be manned, as they were in 1919, to save not only Poland but Europe.

MEDICAL RENAISSANCE

Poland is unique in her medical renaissance. As I see it, this could have been accomplished only by state control with wise planning and by a profession of undaunted courage and remarkable dynamism and devotion.

Within 15 years the physician census has reached 27,646 in 1960, and the number of dentists 9,326. The physicians number 9.3 per 10,000 population, a figure comparing respectably with that of the United States. In the same year there were 654 hospitals with 165,137 beds besides 171 Infirmaries, 811 Maternity Centers, 86 T.B. Sanatoria, 59 Preventoria, 5 Nervous Disease Sanatoria, 12 Rehabilitation Sanatoria, 4041 Dispensaries, 1724 Health Centers, 2377 Health Outposts, 2875 Maternity Outposts.

In terms of money, the health-care expenditure in 1955 was 5,282 million zlotys estimated at 73 million dollars. In 1959, this item may be estimated at 93 million dollars or approximately 8 per cent of the total national budget. This figure compares with slightly over 5 per cent for the United States and about 4½ per cent for Great Britain.

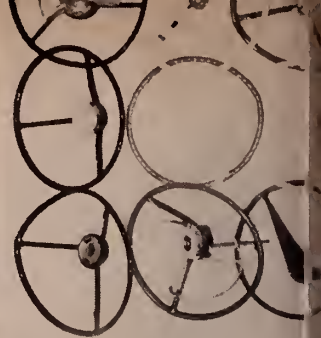
Physicians' salaries in Poland are penurious. The young assistant receives 1300 zlotys (practically equivalent to \$18) per month; the average professor's salary is 3,000 zlotys (\$42) per month with a maximum salary potential of 7,000 zlotys (\$100) per month. Most of the young assistants take on an additional 6-hour assignment at another hospital. A significant percentage of the physicians' wives are also physicians and are thus able to contribute to the family income. A family with two children requires approximately 3600 zlotys (\$50) per month to live respectably though abstemiously — naturally without an automobile. The average worker's salary is 1700 zlotys (\$24) per month.*

Poland's medical needs are still great. The student-to-teacher ratio should be reduced, her medical academies rebuilt and re-equipped, more hospitals built with twice the present number of beds, and research expanded through financial aid and scientific exchange. All of this and no less, Poland deserves.

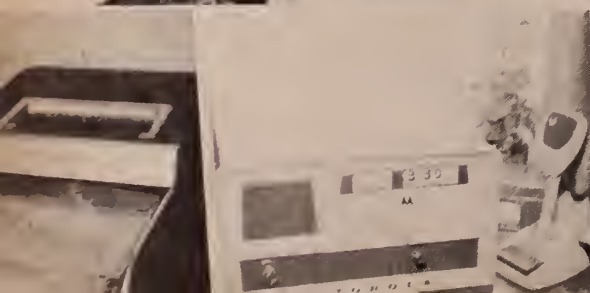
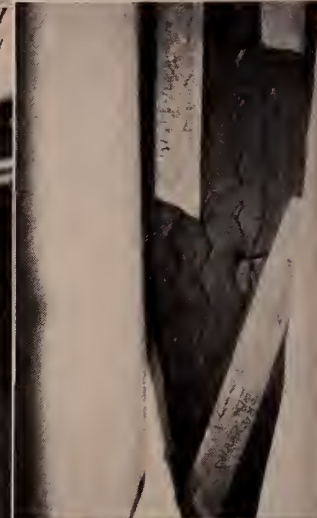
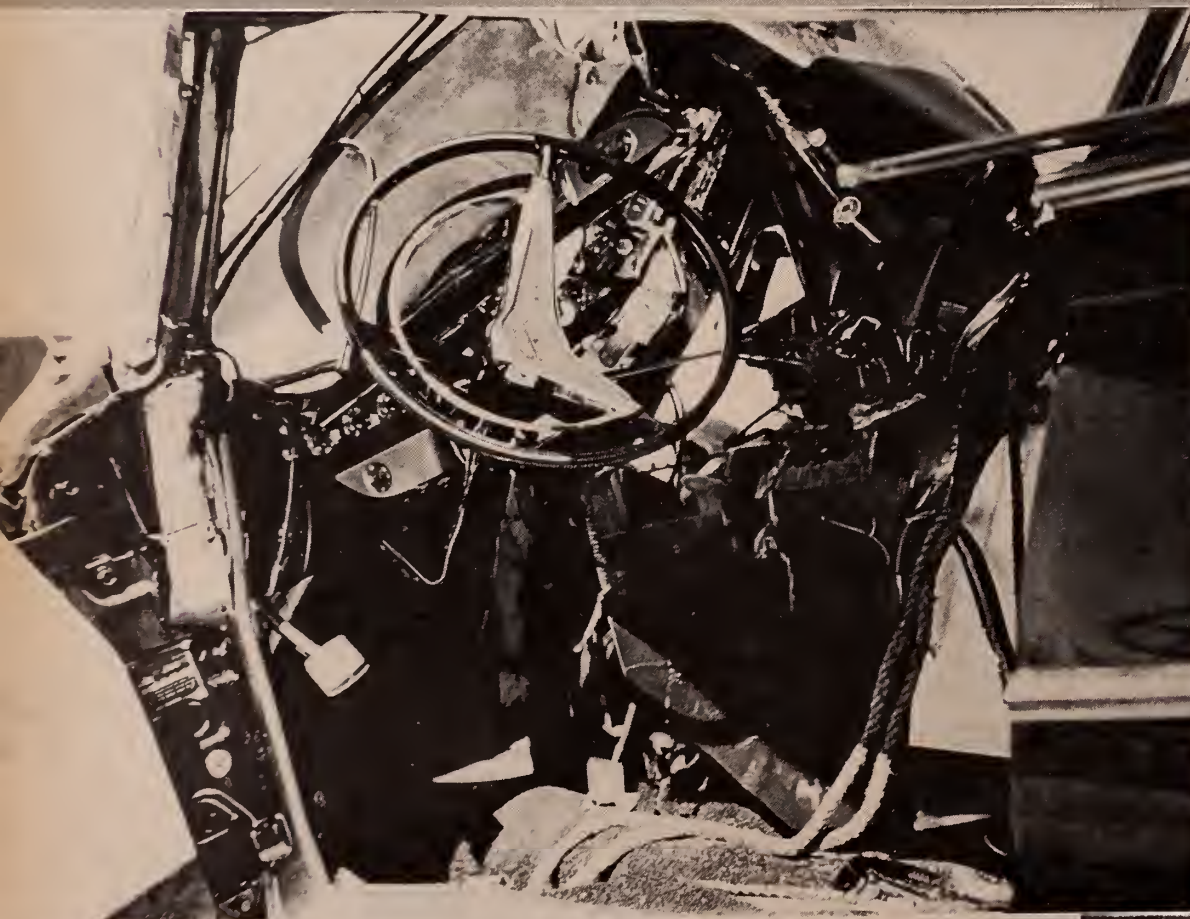
*These dollar equivalents are estimated on the buying power of \$1 equals 70 zlotys, an internal exchange rate as opposed to \$1 equals 24 zlotys, the official foreign exchange rate.

(right) Statue of Mme. Curie in courtyard of the Marja Skłodowska-Curie Oncological Institute in Warsaw.





DEATH



THE HARVARD PROGRAM
OF RESEARCH ON FATAL
HIGHWAY COLLISIONS

BY DRIVING

Alfred L. Moseley

RESEARCH ASSOCIATE IN LEGAL MEDICINE

A TREMENDOUS amount of publicity materials go on radio and television stations, into newspapers and magazines, onto billboards, and echo in hundreds of thousands of spoken words.

Yet automobile deaths continue at the rate of 104 a day throughout the year! We start in horror to read or hear about multiple deaths in aircraft accidents. But we have yet to equal in any air crash the average daily motor vehicle death toll of the holiday periods. In point of fact, there have been only five days in 10 years when less than 100 persons have been killed in auto mishaps in the United States.

Two and a half years ago — after 17 months of preparatory research activity — “Research on Fatal Highway Collisions” was initiated at Harvard under a research grant of \$809,820 from the National Institutes of Health. The program is now at mid-point in a five-year period.

The program is unique in the broadness of its scope; accident studies have hitherto been conducted only on very circumscribed aspects of automobile fatalities. To the best of our knowledge, there is no comparable study being carried on anywhere in the world. Nevertheless, the program has had many critics who claim that such exhaustive studies are unnecessary.

The basic viewpoint in the research is that of a team of scientists representing many disciplines, each looking



Steering component failure before collision is indicated by bolt imprint (light spot, right center) in rubber.



Left lamp filament should be in straight line. Distortion shows brakes were on at time of impact.

independently at the individual case. This process is effective in producing disagreements, which are in turn resolved by experimental, operational, or clinical research.

Studies take place at the scene, at the police station, in the jail, in the court room, in the mortuary, in the hospital, in the home, at the place of employment, and in archives of public records.

For purposes of gross description, the team may be divided into two groups. The operations group includes a mechanic, automotive engineer, traffic engineer, and human engineer. Their responsibilities are to examine the scene, the vehicle and its components, pedestrians and occupants, and property. The clinical group is concerned with the physical and psychological condition of each person involved in the case. This group includes a pathologist, chemist, technician, sociologist, internist, psychiatrist, ophthalmologist, optometrist, psychiatrist, statistician, clergyman and attorney. Patients and other survivors and decedents are examined directly, when possible, and records are utilized additionally.

Cases are usually referred by Inspectors of the Registry of Motor Vehicles through the Communication Division of the Massachusetts Department of Public Safety. In some instances, cases have been referred by state, local and MDC police officers and by medical examiners. Calls

Mr. Moseley received his highway research training in the Harvard School of Public Health under the direction of Dr. Ross McFarland. The present study was developed after an invitation from U.S.P.H.S. to submit a proposal for a study in a new area. A survey of the existing studies indicated that highway deaths were considered to be a point on a continuous curve. The attempt to separate deaths out for an analysis led to this study.

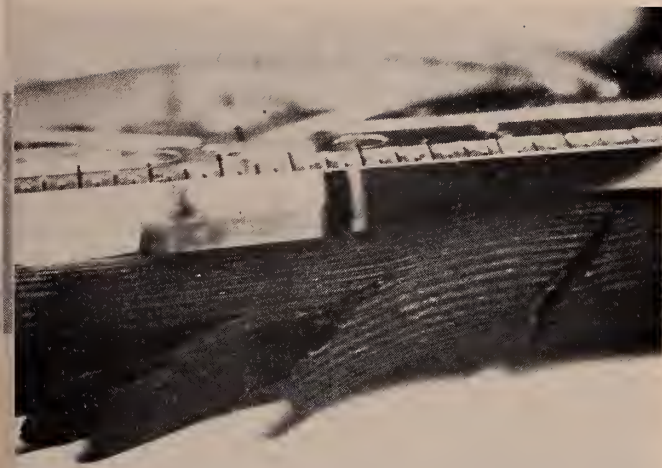
are received during continuous on-call periods by telephone and by radio. (Research group communications are maintained by radio station KCG 787 at 42.96 Mc. located in the school.)

The most fundamental assumption held on the automobile death is that it occurs by accident. This view is an international one. It is false. It is worse than that. The view is an automatic barrier to intelligent observation concerning the problem. View, if you will, the public control programs:

1. SLOW DOWN AND LIVE
2. IF YOU DRIVE, DON'T DRINK, IF YOU DRINK, DON'T DRIVE
3. OBEY THE LAW
4. COOL DOWN BEFORE YOU DRIVE

The opinion this writer holds is that this long-standing problem constitutes a national disgrace.

Why is this problem in a state of disgrace? First is the assumption that it is an accident. If chance is the dominant factor, the problem is not subject to control. Second, responsibility for investigation is often placed on police personnel who have little or no training, and consequently, limited interest. Third, many communities have infrequent cases, so that no experience is accumulated. Fourth, medical examiners and coroners have not been responsible in their public trust to do more than superficial examinations. (Perhaps as few as 60 of the over 500 fatalities in Massachusetts this year will be autopsied. No blood work will be done in more than ten additional cases.) Fifth, investigations by groups other than police are slanted, so that only selfish interests dominate. Sixth, research people have avoided the problem



Hose carrying brake fluid has been deliberately cut.



Hose carrying brake fluid was deliberately cut. No other structure of vehicle had access to this component.

for two reasons: One is the image of the problem. If the problem is speed, "SLOW DOWN": if it is alcohol, "DON'T DRINK AND DRIVE": if it is fatigue, "STOP AND REST." On the surface these seem to be simple problems, and their solutions seem to be simple. But they are not.

The second reason that research people have avoided the problem is the relationship to politicians. Academic people reason that with ticket-fixing, payoffs, influence, consideration, and other epithets, only a researcher with a character disorder would attempt working on the problem.

One may have considerable faith, however, in the capacity of the American public to do the proper thing if enough facts are brought to their attention. What may be said this time on the basis of 100 cases studied in depth?

VARIETIES OF AUTOMOBILE DEATHS

Cases, as we see them, may be divided into seven classifications based on the dominant characteristic of the cases. An additional principle to consider in this grouping is that causes are multiple. Many important deleterious factors occur simultaneously. Some cases demonstrate such importance in several areas that different persons will rate a case differently depending upon shades of interpretation. This classification system represents a new method of investigation in a field in which the geometry of the collision course has been the accepted method of classification.

ENVIRONMENTAL FAILURES

Environmental failures concern the factors of the roadway and the environmental variables. A head-on

collision in the fog on Route 128 was precipitated by following the white line. At a temporary construction crossover, the lines had not been removed, although the construction need no longer existed. The crossover was still open. The vehicle entered the southbound lane, where the northbound vehicle was following the white line adjacent to the median. One driver died. The other survived, in part due to the recessed post steering wheel design, and in part due to excellent medical care.

This case was of interest in another way. For some time it has been our practice to attempt the prediction of injuries from the study of the collision course and the occupant path of body travel. The decedent in this case lived for only 90 minutes after admission to the hospital. The second driver was described as in "good" condition and able to go home in perhaps "three days." On the basis of our studies, however, we insisted that the patient might be more seriously injured than suspected and when the predicted injuries were reviewed with the physician, the patient was swiftly re-evaluated and was correctly placed on the danger list, where he remained for ten days. He subsequently recovered, but he would have succumbed had the original diagnosis prevailed.

VEHICLE FAILURES

Our studies have found a whole new group of traffic fatalities which are due to mechanical failure of the vehicle. Hitherto, this possibility was largely unexplored.

Vehicle failures are of two types. A driver went to sleep at the wheel and entered the median. When he applied his brakes, he pumped brake fluid out through a hole in the metal line along the rear axle housing. Once the collision course was started, the faulty braking prevented adequate driver control and the driver lost his life.

Vehicle failures may also trigger the collision course. A vehicle traveling northbound on a numbered route moved violently across three lanes to the roadway edge, at which point the driver reversed the direction, crossed the median and was hit by a vehicle traveling southbound. The collision course was due to a tire which was defective. It had been repaired when it should have been discarded. There are many more collisions within this category than anyone has heretofore suspected, simply because adequate investigation was not available.

In both examples of vehicle failure, emergency situations occurred which could in some degree have been avoided by prior emergency training. If the first driver had not attempted to regain the pavement, no death would have occurred, since he had been in a wide median where there was nothing to hit. If the second driver had been trained in how to maneuver and control a car under conditions of a blowout, the over-control in steering would have been avoidable. It is tragic for a person to have his first blowout on the last day of his life. Emergency training has been successful in many military and civilian industrial areas. Why should it not offer promise of aid in the "human error" component of this problem on the highway?

EMOTIONAL PROBLEMS

Emotional problems do not appear to be the transitory type. The emotional-involvement case demonstrates deeply rooted histories. In one such case, four friends had "staked out" the man because they thought his state of mind to be so poor that "something terrible was in the making." For four weeks, they protected him from himself. One night he left his girl friend's house and started

home. A combination of short sight-distance, high speed, an ice patch and a steel pole rang down the curtain on a drama in which only the time and place had yet to be decided.

PATHOLOGICAL CONDITIONS

Pathological conditions, illness, and toxic states play important roles. The diabetic driver taking his Orinase kills a pedestrian who wears a brace and carries nitroglycerin for a heart condition. The driver who exhibits a shifting bilateral exophoria kills a pedestrian who has severe bilateral cataracts. The intoxicated driver kills the intoxicated pedestrian and leaves the scene. How do the deficient driver and the deficient pedestrian team up?

SUICIDES

Suicides are attempted by both occupants and pedestrians. The evidence of deliberate aiming at a tree might be overlooked if one suggested that the intent was to injure, but not to a fatal degree. Supporting evidence in pedestrian attempts includes notes left to explain victim's suicidal intentions. How shall we understand the pedestrian who uses you and your car to bring about his death?

SUSPICIOUS FINDINGS

Suspicious findings constitute the first of three factors in a label which would be called murder. Use of a motor vehicle is probably second to poisoning as a method, and *more* likely to go undetected. One can reason about means by which an observed event may have occurred. In two cases a rubber hose had been cut through the wall with a sharp knife. (One of these fatalities had a

Black tungsten sphere at end of lamp filament (right) is evidence that headlights were on at time of impact. This means that driver could have seen road ahead, had he been looking.

Conviction of unlicensed 15-year-old boy was foregone conclusion until failure of steering system was found.



line of brake fluid 35 feet long leading up to the scene of the crash.) In another case an important cotter pin was missing from the steering system. In another case a ball-pein hammer had been used to close the lines for brake fluid along the rear axle housing. In still another, the medical examiner was advised by hand-delivered memo of a disconnected vacuum tank, an empty master cylinder and a disconnected brake line in the vehicle in which a professional man died. The memo was never acknowledged, nor the investigation continued. (To get to the point where we call a case suspicious, we must first have clearly established the fact that the defect existed prior to the collision course and that it definitely influenced the maneuverability of the vehicle in the collision course.)

In each of these cases, we noted a method by which the vehicle was subjected to tampering. Public officials did not believe these data, even when they were demonstrated by direct observation.

NO FINDING

Hypothesis dominates the few cases in which nothing of demonstrated significance is learned. "A lot of facts and no knowledge" may be an appropriate description. Perhaps our methods lack precision, or do not cover enough areas. Perhaps our informants do not supply us with factual data. Perhaps we are fatigued and fail to be perceptive.

NEW CONTRIBUTIONS TO METHODOLOGY

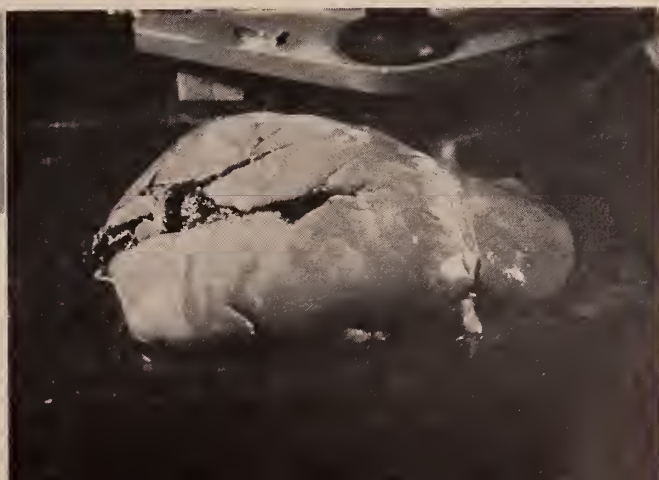
Contributions to methodology have developed during the study: The early cases studied were restricted to fixed-

object collisions. The reason for this was that there would characteristically be only one occupant, and he would be dead. There would usually be no witness. Thus, we would have to depend upon our powers of observation to determine what might have happened. (a) The analysis of lamp filaments is useful in determining whether the lamp system was functioning in night cases. (b) Brake light filament deformation is useful in making the judgment that in a given case the operator applied his brakes before the collision. He was therefore not asleep at the wheel at the time of collision. This means also that the absence of skid or tire marks at the scene does *not* indicate that brakes were not applied. (c) We have found "footprints" of the brake pedal on the soles of shoes. This means that the driver's foot was on the brake at the time of collision, giving indication of the perception of danger and reaction to it. (d) Ultraviolet examination of the scene in hit-run deaths after darkness offers help in locating parts of lenses which fluoresce, and may be found to fit a suspect vehicle. Ultraviolet examination of tire marks is helpful in describing how a vehicle moved in the collision and, in hit-run cases, the characteristics of a tire which made marks left at the scene. (e) Path of body travel follows an "expected path" from the center of seated position to the center of the impact site. From this may be predicted the structures involved in the production of injuries. When the "observed path" of body travel diverges from the expected path, the indication is that some unusual circumstance dominates the case, requiring special investigation. Often the finding is important vehicle failure. Several factors seem to influence the path of body travel at the moment of impact. The car body opposite the impact site tends to move vertically: In other words, in a frontal collision with a tree, the rear

Footprint of brake pedal is on the right shoe. This means that driver was not asleep.



Autopsy sets aside the theory of heart attack in favor of a ruptured liver and hemorrhage.



bumper may move high enough into the air to lift the wheels completely off the ground. If this impact is not centered so that weight distribution is equal on both sides of the impact site, the vehicle will move in an arc (yaw) about the impact site. The combination of these two forces vexes a police officer because the rear wheels may be six feet away from their tire marks.

The third force is called *deceleration gradient* and refers to the fact that different parts of the vehicle demonstrate different rates of deceleration. The contact area of impact stops with great rapidity as compared to adjacent structures of the vehicle. In other words, the part that hits the tree stops while the rest continues to move a short distance. Further experimentation will lead to an understanding of how this factor affects the path of body travel, as indeed it does.

As the reader considers the above descriptions, he may arrive at the conclusion that this seems very different material from the concept of automobile deaths which he held. The present writer views the collision death case as related to damage and injury cases in the same way that cancer is related to the common cold. Contrary to prevailing opinion, the problems have some components which are common, but the differences overtake the similarities quite readily. This hypothesis holds that several differences between fatals and other cases may be observed; fatals do *not* tend to occur, as do injury cases, at (a) the same time of day or day of week, (b) in the same traffic locations, (c) in the same conditions with respect to traffic congestion. Some commonly held views do *not* apply: most fatalities are not caused by (d) speed, (e) traffic violations, (f) lack of courtesy. (g) And it is not recognized at all that there are qualitative differences between normal wear and cataclysmic failures of vehicle components: (h) in some cases the highway is wrongly blamed for a death that was rooted in prior illness or pathology, (i) some cases of "accidents" involve deliberation, suicide or tampering, (j) in some types of cases predictable personal and social characteristics may be seen.

The hypothesis that automobile deaths constitute a different "disease" is important. If true, it means that public programs for investigation and control of fatals and non-fatals will have to be far broader and also specific for each problem. It also means that a great deal of traffic engineering activity now applied to control the deaths may be completely wasted because the problems are not factually related to the design of the highway. Suicide and tampering cases, for instance, would not appear to involve highway design.

In order to serve the public interests and the interests of justice, the automobile death problem must be upgraded to the level of respect for human life. How can this be accomplished? The hypothesis underlying the death investigation should be that a homicide has been committed. Therefore, the investigation into a traffic fatality should be as thorough as that accorded a murder. The validity of this hypothesis should be tested by carrying out a standard examination in every case, an exami-

nation which should include (a) detailed examination of the scene by a traffic engineer, (b) mechanical and engineering examination of the vehicle and each component the failure of which would affect safety in motion, (c) post-mortem description of the external and internal injuries of the decedent, and a determination of the cause and manner of death; toxicological examination of the blood, (d) physical and psychiatric examination of each surviving driver, (e) personal and social history of each primary person. These examinations should all be required by statute so there could be no exceptions to their application. The findings should be public records, so that justice and fair play in criminal and liability procedures would be assured. To ask for this degree of concern for the loss of human life in an automobile case requires that high competence at the professional level characterize those entrusted with the investigation.

Some problems requiring further research are apparent. (a) Emergency training procedures for soft tires, panic stops, skidding, blowouts, loss of power steering, loss of brakes must be worked out in automobile engineering and in driver education. (b) The identification of the driver, when all occupants are ejected and there are multiple possibilities, is not soundly managed and some police departments resent any hint of dissent against a hastily formed opinion. (c) Sudden death often follows the notification of sudden death. (d) Severe neuroses or psychoses either develop, or develop to maturity, after notification of sudden death. (e) Is there also a super-clotting agent manufactured by the body when there are tissue injuries and hemorrhage, which might be identified in hemorrhagic blood? (f) What is the real nature of the retroactive amnesias which are observed? Can the memory be reinstated by any means? The criminal and liability status of a person may shift from suspect to defendant if one does not have sufficient memory to protect himself, the defendant may appear in an extremely unfavorable light in any direct testimony and if someone wished to railroad him in the courtroom. (g) Why are proven safety devices such as recessed-post steering wheels, and seat belts rejected both by many members of the automobile industry and by the motoring public?

THE attitude of the automobile death problem by this research staff may be summarized by mentioning the difficulty of the work, the intricate complexity of the many variables, the promise for a better understanding of the "disease," and the high personal and professional motivation to contribute scientifically to its solutions. We have encountered many road blocks which were removed by developing better methods. We have managed organized opposition by careful work, integrity and patience. We have rewarded cooperation by being cooperative. We have balanced the lack of assistance in high places by the genuine interest and help offered by persons whose lives were directly affected by the cases. By these several means the nature of the automobile death is slowly yielding to scientific inquiry.



HARVARD WOMEN IN MEDICINE

FIVE WOMEN PHYSICIANS SKETCH
THEIR LIVES SINCE GRADUATING
AS "THE FIRST DECADE OF
HARVARD WOMEN IN MEDICINE."

DORIS R. BENNETT '49

OCCASIONALLY my daughter Susan, age nine, after overhearing one of my conversations with a harassed mother who won't believe that her Johnny will grow up to manhood even though he *doesn't* eat his vegetables, asks me, "Mom, why in the world did you become a doctor?" At that point, I'm apt to shake my head and echo, "Why, indeed?"

This leads me to a still more bewildering query — why do so many people ask me, "Why in the world did you become a doctor?" Are other "career women" so frequently confronted with this question? For instance, are they asked, "Why did you become a school teacher, or Miss Rheingold of 1961, or president of the League of Women Voters?"

For me, this type of question is almost unanswerable. A combination of familial influences in the formative years, professorial influences in college, and fortuitous circumstances group together into an answer which is far from succinct, and is, to the outsider, incomprehensible.

When we started medical school in 1945 — the first women to enter H.M.S. — the upperclassmen were sure they knew the reason for which we were invading their sacred male domain — "to get husbands." After having themselves struggled through anatomy, physiology, and biochemistry, they should have known that there must have been easier ways. The fact that we started as twelve unmarried, even unengaged, young women, and four years later seven of us were married — four to doctors — may seem at first glance to give credence to the upperclassmen's charge. I was the worst culprit, for I became the first woman to marry, and, horrors, I presumed to marry another Harvard medical student! Whether to assume my husband's name or maintain my maiden name presented a problem. When it was decided that I should become Bennett and relinquish Rubin (with its inevitable accompanying nickname of Billy), a new precedent was set at Harvard Medical School. Henceforth, all female medical students who married in school assumed their husbands' last names.

Our first contacts with our medical colleagues left us with mixed emotions. Many of the upperclassmen, and some of the faculty, viewed the presence of women at Harvard as a disturbing upheaval of tradition. The upperclassmen subjected us during our first year to mild, but not always good-natured, hazing. We learned to our dismay that men were as gossipy as women, if not worse, and that cattiness was certainly not a female prerogative.



Dr. Bennett, with Laurie, 6, and Susan, 9.

As we progressed through the basic sciences to physical diagnosis, and thence to clinical medicine, we became more secure in our relationship with our colleagues, and acceptance of us as doctors did evolve. Once we entered upon internships and residencies, being women doctors no longer presented any great problem. Occasionally, however, some small incident would occur to make us realize that we did have our limitations. A good example occurred during my internship, when I was called to the accident room by the chief surgical resident to reduce a dislocated shoulder. The patient, a burly truck driver, lay on a cot. I was instructed to place my foot in his axilla and pull on his arm until I heard a snap — indicating that the dislocated humerus had returned to its socket. I followed instructions, pulling until a loud snap was heard. The resident and other interns present congratulated me. Only the patient and I knew that the shoulder was not reduced, but how could I explain to the assemblage that the loud snap had been the noise of a garter dislocating from its girdle?

Now that I am practicing pediatrics my acceptance by colleagues and patients is quite complete. One of my favorite patients is a four-year-old girl, whose pediatrician I have been since her birth. I referred her to a male ophthalmologist, whom she confounded by saying, when she saw him for the first time, "He can't be a doctor — he's a man."

Despite the usual exasperating and, at times, nerve-racking aspects of pediatrics, I find the most gratifying relationship is with the mothers of my patients. I fear that in a majority of cases they have selected me as their pediatrician not because of my qualifications as a physician, but because I am a woman, a mother of two young

children. They feel a sense of identification with me, and I with them. Not only can I tell them what to do in case of illness, prescribe medications, make diagnoses, etc., but I can tell them how I conquered certain problems in nursing, feeding, or washing diapers — helpful hints which carry authority because they come from both a doctor *and* a mother. Because of this empathy my patients are very considerate of me — rarely calling during the night or early in the morning, because they know I have to get my children off to school. It is interesting that, contrary to expectations, my husband, Warren, an internist, has far more phone calls at night than I.

Just as my patients benefit somewhat because I am a woman, so do my children benefit because I am a doctor. For instance, when I start to scold my daughters because they don't eat their vegetables, I remember my advice to the harassed mother whose Johnny wouldn't eat, and I desist, shrugging my shoulders and saying to myself, "Don't worry, they'll grow." The only one who insists he doesn't benefit from my practice of medicine is my husband, but then, as my mothers and I agree, "don't pay attention to husbands — they like to complain, but they don't mean it."



DOROTHY T. CLARK '52

I WROTE this piece shortly after giving a talk on mental illness to one of the local civic organizations and while planning a Brownie Troop cookout. During the same week, I was also giving a morning coffee for one of our new neighbors! Someday I shall write a book of experiences as "that lady doctor" in this profession of ours; in the meantime, my life can be summed up by one word, "BUSY."

I first spent five years in general practice and eighteen months in the Outpatient department of the Orlando Air Force Base in central Florida. While there, my most amusing experiences came while standing GI sick call. The men never could quite adjust to having a woman who was not even in uniform as their medical officer. A retired colonel typified the more extreme reaction to my presence when he stopped dead outside my office and bellowed in his best parade-ground voice, "What is this man's Air Force coming to?!!" The snickers in the waiting room turned to guffaws as the patients realized that a woman physician was in Room 6.

I am now working Mondays, Wednesdays, and Thursdays as acting ward physician for the maximum-security, acutely disturbed ward in a psychiatric division of a large psychiatric hospital in Georgia. This 1200-bed

hospital is the neuropsychiatric Veterans Administration Hospital for Georgia, South Carolina, Florida and parts of other surrounding states.

My patients are, of course, male and, although the only other women on the ward are secretaries and registered nurses, I have never experienced any difficulties with my colleagues because I am a woman. Recently, following a visit to our most disturbed wing with our consultant, he voiced a question often asked me: "Aren't you sometimes frightened on this ward?" My answer was negative. The other patients would always intervene for me as they have on several occasions, and this I find to be one of the benefits of being the female physician on a male ward. In fact, the only drawback to my work is that there is never sufficient time for the research and individual therapy one would like to do on this very active ward, in which the patient turnover is so rapid.

On Tuesdays and Fridays, my "days off," life is as busy as the rest of the week. Our two girls, in first and third grade now, are growing and learning. There are weekly meetings of my third-grade Brownie Troop, and there are duties as vice-president of the Civic League, treasurer of Helping Hand (our local charity and welfare group), and as a member of PTA and the American Association of University Women. When the local husband-

Dr. Clark



and-wife physician team is away, I "cover" our town of Jackson for them.

My husband, Ben, is a chemical engineering graduate of Purdue University. At present he is a Project Engineer with the Atomic Energy Commission at the Savannah River Project which begins just south of Jackson and extends over 315 square miles of South Carolina bordering the Savannah River, 20 miles south of Augusta, Georgia.

Last year, we found time to design our new home in Jackson, about 20 miles from the hospital. Most of our hobbies center around the house now; we have a yard to plant, draperies and slip covers to sew, and furniture to build and refinish. In spare moments, I make clothing for the girls and myself. We have a hi-fi and enjoy our classical library but our professional journals, reading, study, walking in the woods, watching the sunset, listening to the birds, playing bridge and working on the house have always kept us sufficiently entertained to avoid the necessity of owning a television set.

So here is a short word picture of our happy little rat-race life as lived here at 618 Fifth Street, Jackson, South Carolina by two little girls, one papa, one mamma, and our neurotic cocker.



RAQUEL E. COHEN '49

HAVING been asked to survey my status as a woman in medicine, twelve years after leaving H.M.S., I stopped in my usual activities and wondered about it. What should I abstract from my rich life as wife, mother and psychiatrist?

Since the thrilling moment in June, 1949, when I received my diploma and two weeks later when my first baby was born — today a twelve-year-old, husky lad who dreams about answering the riddle of the cancer cure without worrying about prosaic classroom endeavors — I have tried to integrate my life within the classic conflict facing a married professional woman. There have been many moments of indecision, of having to sacrifice my loved ones' comfort, and of gratefulness for help from teachers like Dr. Harry Solomon at the Massachusetts Mental Health Center, who permitted me to enter my residency on a half-time basis.

Before this I worked at the Children's Unit of the Metropolitan State Hospital for five years, also on a part-time basis. During those years my schedule was divided between my growing family (two daughters added

their mischief and charm to the trio) and the fifty patients that comprised the female ward of which I was in charge. It was here that I acquired solid experience in the pathology of juvenile mental illness and here that my interest in clinical psychiatry was born.

Since 1955 my professional experience has been enriched by the clinical work to which I have been exposed at the Massachusetts Mental Health Center. After two years in the Children's Unit, I transferred to the inpatient adult services where I am now a Senior Staff Psychiatrist and Harvard Medical School Instructor.

My professional interests outside the Hospital are varied: I have spent a few years at the Cambridge Court Clinic and House of the Good Shepherd, working in the area of juvenile delinquency. My public health background has led me into community education in mental health and preventive work and I started a project at one of our local day-camps to find out whether a team of trained camp counselors led by a psychiatrist could detect early manifestations of emotional disturbance.

My work at the MMHC now consists mainly in providing consultation and supervision to one of the services in the Hospital. Within this area, two challenging research

Dr. Cohen and family



themes have attracted my special interest — how to find better ways to teach psychiatry to residents, and how to develop the Day Care Program as a new approach to hospitalization. I also lecture in clinical psychiatry at Boston College, Boston University and the University of Vermont. I have written several articles about clinical administration in a mental hospital.

I have structured my professional responsibilities in relationship to family activities. I share with my lawyer-husband, Laurie (Harvard '33, LIB '36), many exciting moments arising from the national and local legal cases in which he has been involved. His special interest in civil liberties allows me glimpses into another professional area. Another unique occasion was our family trip to my native Lima, Peru, in 1960, where Laurie became interested in Latin American problems and the vast differences and difficulty of communication between our countries. Here at home, we gripe about suburban life and anticipate moving back to the city as soon as our children finish high school. He and I pursue with our children the beauties and wonders of growing up, the new educational methods in their school system and, also, the old-fashioned habit of nagging them to do their homework.

I have not been a "trail blazer" in the specialty of psychiatry; women have already made valuable contributions to this field. The natural endowments of a woman — potentially a wife and mother — enhance intuitive understanding and familiarity with emotional life. These qualities, coupled with the infantile needs of our psychotic patients, have made for an easier acceptance of women in this field. We share, of course, the other side of the coin; that is, the negative feelings patients harbor from their former relationships with women.

My profession often poses problems at home, for my family and friends seem to expect my behavior to be "different" somehow. When I have shown signs of short temper my children will sometimes look shocked and say, "But mother, you're a psychiatrist." My neighbors will remark at a P.T.A. meeting, in lieu of a compliment, that my children are not "typical psychiatrists' children." I can never win an argument with my husband because he has up his sleeve the perennial, "Now don't try to analyze me!" On the more serious side, however, I have found that my awareness of and insight into private human relationships stimulated by my work with patients make me prize my good fortune in being a wife and mother.

SO I continue day after day, intertwining experiences, balancing schedules, thinking of ward problems while chauffeuring the car pool to dancing class and worrying about Sarita's cold while presiding at a staff meeting. The practical details of housekeeping, seeing that the freezer is stocked, making sure that dentist appointments are kept, punctuate busy weeks, separated by more leisurely week ends.

Christmas, 1961

As I come to the end of my thoughts, I find myself agreeing with Dean Mary I. Bunting of Radcliffe that women can extend their activities beyond their household and I feel very lucky "at having something awfully interesting that (I) want to work on awfully hard."



MARY L. EFRON '51

IT is now 10 years since my graduation from Harvard Medical School. Following internship and residency at the Peter Bent Brigham Hospital, I accompanied my husband to England where I studied neurology for a year. After this we returned to the United States and during the two years that my husband was assigned to the New York area, I practiced internal medicine with a group in Brooklyn. We then returned to London where I worked in Dr. Charles Dent's laboratory at University College Hospital. There I learned some chemistry, a good bit about chromatography, and began to appreciate that research was more appealing to me than I had suspected initially. Since my return to Boston, I have worked at the Children's Hospital Medical Center on several problems in the general field of biochemical genetics and amino-acid metabolism.

In the course of these ten years, I have had three children, one born during my residency (that was a difficult year), one while I was practicing, and one in London. Time out for these disturbances did not exceed the usual time lost because of "flu," holidays, etc. During this ten years I have worked nearly full time. This has been possible only with the assistance of a succession of "mother's helpers" — some less inadequate than others (and even the inadequate ones earned more than I did).

After extensive orientation in psychiatry at Harvard Medical School, I used to worry about the effect of this unusual existence on the children's "psyche." I even went so far as to work only half a day for one year, but found myself so busy with diaper- and dish-washing that I spent perhaps less time with the children than I have since. After a few years it became obvious that they were turning out no worse than any other children. Because Mother was not there to chauffeur them about and to solve all the small problems that arise during the course of the day, they have had to develop a certain commendable self-reliance. Occasionally I have had to settle an argument over the telephone — perhaps after another 10 years I shall learn to do this successfully!

When the day first came that they were busy with their own friends and activities, and offered me only the most casual "Hello" when I arrived home worried about how they had survived without me, I was glad I had not

given up my other career. I do make a point of spending a lot of time with them in the evenings (now that I do not have to do the dishes!), which brings up one belabored but true point. An essential ingredient of a happy combination of two careers is a husband who is not just tolerant of, but actually enthusiastic about, his wife's work.

Judging from my experience, which, perhaps, has not been typical, I would say that the problems of women in medicine can be divided into two groups: (1) those common to all women with a career and children, (2) those specific to the career of medicine. It seems to me that the work of women in medicine is no different from that of their male counterparts; for example, soon after entering practice, I found that, although I was trying to practice "internal medicine," I had to know a great deal more about gynecology than I had been taught or bothered to learn. I had to learn that the hard way! This would

not have been a problem in pediatrics, ophthalmology or anesthesiology, and I daresay nearly everyone wishes he knew more about some field in the first years of practice.

In my own experience there have been no problems in dealing with male physicians or patients. Indeed, I have often suspected that the fact that I am a woman may have been advantageous. There have been, for me, no opportunities lost, careers frustrated, etc., which could in any way be attributable to attitudes on the part of male colleagues.

THE problems involved in having a career in medicine with another career at home must be the same for women in any career — business, law, politics, etc. Both are careers which could occupy one full time and there is never time enough to go around. Having chosen to have children, it is obvious that I cannot, nor do I wish to, spend the 12 hours a day in the laboratory that my male associates sometimes do. While I frequently would like to complete a particular bit of work before leaving for the day, I feel that I ought to and, indeed, would rather leave earlier and spend some part of the day with the children. For this reason I cannot expect that my work, or that of any other married woman in any professional career, will progress at "optimum" speed, especially during the years before the children spend most of their day outside the house.

This duality of interests manifested by women in medicine must be considered in evaluating "how they turned out." Perhaps the worst time for summing up is the period of 10 years after graduation. At this point I think it may be that the women as a group appear to be less "productive" than their male classmates. Is this also likely to be true at the 20-year mark? I do not know. The only thing to be said in our favor is that while we are slow starters, we live longer.

Dr. Efron



M. FRANÇOISE HALL '57

"PLEASE," said the ragged old woman timidly, "I would like to see the 'doctora.'"

"The 'doctora' is very busy," answered the nurse, "but maybe we can put you through. Why don't you sit down over here."

It was true, the "doctora" — the woman doctor — was very busy, but she was enjoying it. She was realizing herself. She was fulfilling the fondest dreams of the thirteen-year-old girl who had made up her mind to become a doctor. She was happy because not only was

she a doctor but she was also making a special contribution because she was a woman doctor.

The old woman sat down on the empty corner of a bench in the line waiting for the "doctora." She was tired, but she wanted to have a good look at this strange place as this was her first time in a hospital. Her twelve children had been born at home with the help of a midwife. Now, she had a pain in her belly and the midwife could not help. She had made several visits to a spiritist not far from her home but the pain was worse. When her daughter told her about the American woman doctor in the hospital, she had hesitated for a long time but she was here now, timid and not quite convinced.

"What could the 'doctora' be doing all this time with one patient?" she asked herself. "I wonder what is going on behind that door."

Finally, the old wooden door of the "doctora's" office opened. Out came a young woman, pregnant, holding a baby in her arms. She was followed by her husband, also with a child in his arms. Then followed four barefoot children of assorted sizes. "Remember," the old woman heard the "doctora" say, "you never have to have more than the number of children you want." The young mother smiled — an unbelieving smile.

The next patient entered the office, an adolescent girl. The old woman moved one place along the bench.

These were my "specialty" cases during the two years that I worked with my husband in the Brethren Church-supported, thirty-bed hospital in Castañer, one of the poorest areas of rural Puerto Rico. I enjoyed it immensely but I also felt a deep frustration at my inability to do anything fundamental about the tremendous problems of the people. What had I done for the family which the old woman saw coming out of my office? In one sense, I had done a lot: I had talked to the mother and father about their urgent need for family planning; I had given them a large can of "Multiple Purpose Food," a protein powder developed by the Food For Millions Foundation of California. I had explained to them the value of it and how to incorporate it in their usual diet of rice and beans; I had written a note to the school asking for shoes and clothes for the two oldest children so that they could go to school; I had prescribed a worm medicine for the children as well as an iron and vitamin preparation; I had given each child the appropriate immunization; and, finally, I had referred the father to our social worker to see if we might help him find work.

But in another sense, I had done very little to help this family with its tremendous problems: my recommendation for family planning was a bit late: they had six children and one on the way. I was also a bit late with my immunizations: all of the children had had whooping cough the month before. The worm medicine I had prescribed might decrease the children's worm load for a month or two, but the earth around their house was undoubtedly heavily contaminated with parasite eggs and it



Dr. Hall

would not be long before they would be passing worms again. Stable employment for the father would have greatly helped the family, but here I could do very little. This was February and before the beginning of the coffee season in October there would be little opportunity for full employment.

This is why my husband and I have turned to the field of Public Health. It was with sadness in our hearts that we left Castañer last year to return to the U.S. where Tom took his Master in Public Health. This year, we are back on our beloved Island and I am studying for my Master of Public Health at the University of Puerto Rico. Our plan is to go back in the field in the near future, perhaps better equipped to help the people of developing countries in the solution of their staggering problems.

How does all this mix with family life? If you ask Eric, 5 years old, you might get an answer in English, or Spanish, or French. If you ask Tefel, 1½ years old, you may not get any answer at all.

BOOK REVIEW

DAS WAR MEIN LEBEN, Ferdinand Sauerbruch, Kindler Verlag, München, 1951.

Before traveling abroad, I like to brush up on the language of the country that we plan to visit. Not long ago, I selected the autobiography of Ferdinand Sauerbruch, *Das War Mein Leben*, as an exercise preliminary to a European trip. It turned out to be something far more delightful than boning up on German.

Each generation has its giants in surgery, and Sauerbruch would certainly figure in any selection from the early 1900's through the Second World War. His is a poverty-to-riches story, for he began in a small German town as the son of a shoe-

maker and ended up as one of the most highly regarded practitioners of his art in Europe.

The ordinary person does not think of surgery as art, but rather as a kind of technical skill. Sauerbruch said that in the hierarchy of values, Science is the Prime Minister, while art is King; and he felt the practice of medicine or surgery to be an art. In bolstering this thesis, he supported August Bier, who was one of the great homeopaths of Germany. Sauerbruch said that Bier was one of the greatest physicians he had ever known regardless of the school to which he belonged.

Sauerbruch's formal surgical training began with von Mickulicz in Breslau. He speculated that it might

be possible to operate on the chest by constructing a chamber with negative pressure, in which the animal's body was immersed, while the head remained outside. The chamber was just large enough for the animal, and Sauerbruch worked through two openings in the wall, with rubber cuffs fitting snugly around his arms, so as to preserve the pressure differential. He worked diligently on the problem in the laboratory, and was certain that it could be done, but when he came to demonstrate the operation to his chief, the pump failed and the rabbit died. It is much to Sauerbruch's credit that he persevered for he finally persuaded von Mickulicz to undertake the first operation on a patient in an operating chamber under negative pressure. The surgeons', nurses' and patient's bodies were in the chamber and the patient's head outside, with a rubber collar around the neck. This allowed the chest to be opened without a fatal collapse of the lungs, for the negative pressure in the room was equal to that of the pleural cavity, or to an altitude of about 1000 feet above sea level. From such heroic efforts stems the modern-day surgery where it is commonplace, even in the small hospital, to open the chest and remove or replace parts.

In the field of prosthetics, Sauerbruch's experiments and contributions are classic. He worked feverishly during the First World War to develop artificial hands that would work, and he tells of one amputee who was able to play the organ professionally with a hand that Sauerbruch had constructed and connected to the stumps of muscles in his upper arm.

Sauerbruch refers to the years of his professorship in Zürich as the most delightful of his life. He established an enormous private practice which included many members of the royalty in Europe and also outstanding personalities of his time. He loved the Swiss and their vigorous,



*Sauerbruch
in St. Moritz
mit seiner
zweiten Frau.*

honey and gemütlich life. He did not give up his allegiance to his native Germany, however, and while he was in Zürich, he doubled as Surgeon for the General Staff of the German Army. Weekends found him at the Western Front, while he spent his ordinary working days as professor in Zürich. He had seen the misery of Germany and knew the relative comforts of Zürich, but when it came, he accepted the call to the University of Munich, with all that it meant in diminished income, discomfort and revolution, for he felt that he was essentially a German.

Sauerbruch had some rather difficult times with the Third Reich, and the people who fashioned the destiny of Hitler's Empire. This may well have stemmed from his deep affection for General von Hindenburg. In the Nazi era, he was almost caught in the net of agents seeking conspirators, and he escaped only by chance. Yet later, after the war, he was among those tried at the denazification trials. Although he was himself exonerated and freed, some of his good friends were hanged as Nazi criminals by the Nürenberg court. In this connection, Sauerbruch said: "I cannot think of people more innocent than — or —. A dozen names come to my mind who were more culpable than these, but what use to mention them, for it would only bring up further trial and recriminations."

Sauerbruch belonged to that vanishing line of German surgeons who considered themselves as generals of an army, authoritarian, and absolute in their own domain. It was inconceivable for a resident, intern, or even an assistant (not to mention a student) to argue with the Herr Professor. When an American saw such surgeons in action he was likely to exclaim, "Drunk with power — swings his weight around unmercifully!" In this regard, Sauerbruch tells some enlightening stories. While he was in Zürich, he was so busy that he often did not have time to examine his students formally, and would invite them to drive with him between clinics. During the passage,

he would question them on surgery. If the student reached Sauerbruch's destination with him, it meant that he had passed, but if Sauerbruch asked the chauffeur to stop at a corner to let the student out, it meant that he had flunked.

Sauerbruch had a rule in his clinic that no one below the level of assistant could marry. It was not clear what would happen if a person violated this edict, for there had been no effort to break the barrier. One of the more venturesome residents decided that *the* time had come in his career, and that he would opt for marriage rather than a career, and he did as his conscience dictated. Sauerbruch returned from his holiday and said nothing, and everyone was wondering how the chief would react to this bit of insubordination. When Sauerbruch was scrubbing with this resident for an operation, he turned to him and said, "I did not realize that you were leaving us so soon." And that was the end.

When I was in Europe recently, I met a surgeon who knew Sauerbruch quite well, and he said, "Sauerbruch had a vigorous imagination, just as he had a vigorous body and a vigorous mind. Believe me, when Sauerbruch says that he had an all-night party and went to the operating room from the party, and operated all day, he meant it. He was just that kind of physical and mental giant."

One of the many fantastic anecdotes in the book is the story of Sauerbruch's summons to Berlin by the Kaiser; Sauerbruch was given secret letters to deliver personally to the King of Bulgaria and to the Sultan in Istanbul. Having delivered the letter to the Sultan, Sauerbruch was asked as a favor to see a member of the harem in consultation. She turned out to be a schoolmate from his early days, who was now fed up with the harem, and wanted out; but she had no means of escape. Sauerbruch told the Sultan that she would need special treatment in Zürich to cure a serious disease. The plan worked and the lady returned to Europe, but Sauerbruch heard nothing from her

until a time when he was attending a surgical meeting in Leipzig. One evening, he received a note at his hotel, asking him to call at a certain address. The taxi driver smiled when he mentioned the street and number, and when Sauerbruch arrived at his destination, it was the most fashionable bordello in the city. His friend was the madame, and had not wasted her talents.

Sauerbruch says some bitter things in his autobiography about theoretical scientists. During his surgical career he had often invited physiologists to be present during his operations in order to see the living human organism, but none of them had ever turned up. He adds the damning statement that he and his colleagues had long known many of the physiological principles of respiration which theoretical scientists were only now discovering.

In his final statement about life, Sauerbruch returns to the denazification trial. One of the lawyers asked him, "What people can you name, who might be prepared to speak in your behalf?" Sauerbruch answered:

"I hope that all of the wounded and the many sick whom I have helped will come forward." He goes on to say, "I do not know for sure, how it will be in similar circumstances, when I am called to the Great Army. Surely there will also be a prosecutor. Perhaps he will complain that I lived with a broad sweep and despised things small and of no importance. He will note that the 'quiet classroom' was not my style. The great amounts of champagne that I have drunk, the many women I have loved will be surely counted. And finally he will say, 'Who, actually, poor soul, would witness for you?'"

"And I feel quite confident, and will answer, 'I hope, that to my rescue will come the many wounded and the many sick whom I have helped and cured, my dear prosecutor.' I will certainly say, 'my dear prosecutor' for up on high one must be polite."

ROLF LIUM '33

